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Gleanings in Bee Culture

April, 1946 Vol. 74, No. 4

A moderate sized apiary at the beginning of the major honey flow. Well painted hives always look attractive and paint does protect them.

New Kinks in *Spring Management*

By John G. Jessup

There's really nothing new under the sun, so don't let the title fool you. What the beekeeper tries to do is to remove the kinks so that spring operations will run smoothly. We've been working on this for years but have never had so many kinks knot up our schedule as last spring. Extensive early brood rearing was stimulated by unseasonably warm weather in February. This resulted in an unusual consumption of stores followed by starvation and then by excessive swarming. Glass companies even cancelled container orders because of the pessimism exhibited by their beekeeper customers. Containers are still hard to secure—possibly as a result of this action. Dr. Miller's contention that a beekeeper should always be prepared for the maximum crop was certainly borne out last spring when the discouraging outlook was followed by the best crop ever harvested from our apiaries.

Performing all necessary manipulation possible at each trip to the yard is the most important kink in efficient spring management. It should be planned on the basis that no bee yard is worked without a definite aim to be accomplished and, on the other hand, all possible manipulations are accomplished in one visit.

Bees wrapped in asphalt for winter should be kept with this protection as long as possible. It is necessary to check for dead colonies but this can be done without unpacking. An early check will pre-

Subscription Price—1 year, $1.50; 2 years, $2.25; 3 years, $3.00. Foreign, 25c additional. Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly.

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vent robbing and eliminate spread of disease within the apiary if any is present. Winter packing left until manipulation is necessary, stimulates early brood rearing by absorbing the heat of the sun and warming the hive. Colonies packed in the fall with 50 to 75 pounds of honey still have ample stores. All colonies are wintered in two story hives, so brood rearing can be stimulated by reversing the hive bodies. They should be reversed as soon as the queen has filled four or five frames with brood. Here in central Iowa, we find this usually occurs by the middle of April and we schedule our unpacking for that time.

If the hive is tipped over on its back when unpacked, it is easy to put a piece of used packing paper where it stood. The bottom board is removed, cleaned, and placed on the paper. The hive body containing the brood and queen goes on first, followed by the body containing little or no brood. This results in the reversal of the brood nest which tends to stimulate brood rearing. It took me 20 years to learn that tipping the hive over is just as effective as lifting the individual supers. This is a small thing but it saves a kink in your back. At this first visit to the yard stores are equalized by removing honey where there is an over supply and giving it to colonies found short.

By the time we make our second visit some colonies will need more room and some may need additional stores. During the winter we have prepared for this by cleaning and sorting all the combs in the honey house. Bees show a decided preference for old dark combs rather than new light ones. The wax moth also prefers the dark combs. So by giving the supers of dark combs to the bees first, only light combs are left in storage in hot weather when the moth is most active. As sorted, they have been placed in separate stacks as follows: White combs, dark combs, combs with honey, and combs containing pollen.

In order to provide additional stores for colonies needing feed in the spring, one or two frames of honey per colony are set aside in the fall. It is easier to feed frames of honey than to provide sugar syrup. While it does not stimulate brood rearing to such an extent, it is not nearly as apt to excite robbing. Our practice has always been to store feed honey in the honey house until needed, but Dr. Farrar recommends wintering colonies in three stories which would save carrying feed honey to and from the honey house. This looks good and we are trying it with 100 colonies this winter. The first supers added are made up with dark combs and those containing pollen which we know is so vital to brood rearing. The queen will usually enter this third super making a three-story brood chamber. Colonies not sufficiently strong to need this third story may again be reversed if necessary. The stimulation of brood rearing by reversing the brood chamber and by getting all available pollen to the colonies at the right time, we emphasize as another kink.

Checking the condition of the colony from the bottom of the hive body instead of the top is more satisfactory and might be called a real time saving kink. If the hive body or the whole hive is tipped on its back, the frames may be opened like the leaves of a book, especially when nine combs are used in a ten-frame body. This will give much more information as to the amount of room or stores present than can possibly be ascertained from the top of the hive unless frames are removed individually. In fact, after using this method of examination for a while, frames are seldom removed from the super unless something is wrong.

Young queens should be available to replace winter loss and failing queens by the last of April. They should be ordered months in advance to insure delivery when needed. By rule of thumb, we figure that 25 - 30 % of the colonies will be strong enough to divide by that time. Three frames of brood with adhering bees, given a young queen at the end of April, can be used to replace winter loss and at the same time act as a swarm control measure for strong colonies. Unless winter loss is extremely heavy, more divisions will be possible than are required to compensate. Such divisions may be held as queen reservoirs above an inner cover on an established colony, with an entrance left at the rear. Usually these reservoirs are used to requeen colonies in which the queens fail before the honey flow. With good luck,

some will be available to run as two queen colonies. This kink, therefore, is to have established laying queens immediately available when needed.

With a vigorous queen at the head of each colony, reversing the hive bodies making up the brood nest, dividing the strong colonies, and providing ample room for expansion by the addition of dark combs, are steps which should eliminate swarming. However, there will usually be some colonies which persist in swarming. Then the kinks really begin to snarl and become a knotty problem.

Several methods of swarm control may be used. First, try Cale's equalization plan of interchanging a colony which wants to swarm with a weak colony, so that more field bees return to the weaker colony. Secondly, the Demaree method may be used, preferably when queen cells are not yet sealed over. Thirdly, when preparations for swarming are advanced, a "shook" swarm is made, and lastly, we might suggest that a rope, a saw, and an empty hive be kept at hand to rescue the swarm hanging in the top of yonder tree! In years when swarming is not rampant, these steps will usually keep it under 3%, but in the season of 1945 swarms were lost even after following all these methods. Our only consolation is that 1945, with the highest percentage of swarming, brought the best honey crop. This bears out the statement of some beekeepers of long experience, that extensive and long continued swarming is followed by a long and heavy honey flow.

At least once during spring operations, all colonies must be checked for American foul brood Weak colonies which might be robbed out must be checked on every visit to the yard.

However, strong colonies will not spread the disease, so there is no necessity to check them early in the season. No colony containing A.F.B. should be packed in the fall so the check is for disease picked up in the spring. It will be the last of April, as a rule, before any evidence will show up, so it is a waste of time to check brood until the last of April or the first of May. Checking for A. F. B. and locating the old queen when making division for queen introduction, may be combined in one manipulation. This helps to accomplish our fundamental aim of combining all manipulations possible at each visit to the yard.

Painting in the apiary helps to keep equipment in top shape with a minimum of time and effort expended. A bucket of paint and a brush in the truck enables the beekeeper to complete a full day's work in the apiary without extra mileage. Painting the outside of the hives seems to have no effect on the bees and can be done at any convenient time. The entrance is the only part of the hive which can not be painted at any time of day. John Tideswell of Omaha has carried this idea to [perfection] He has an elaborate power spray outfit which he takes to the yards. Equipped with two spray guns he says that he and a helper can paint a yard of bees five stories high in an hour. Well painted hives not only lengthen the life of the equipment but are an inspiration to better beekeeping. Just another little kink!

This all boils down to **"Plan your Work and Work your Plan."** Keep your bees the best you know how with the least effort and expense. Don't try to guess which will be the good years and which the poor. Just see that your bees are ready for the honey flow each season. When the crop is short you will get all there is to be had. When a bumper crop comes along you will wonder how the bees could pile up so much in such a short time. After all the headaches of spring management it is a real thrill when the honey flow begins. Brood combs show white when the hive is opened—the brood is bordered with cells packed with honey—the worry of starvation is over. This is the most exciting time of the beekeeper's year. How long the flow will last no one knows, but pile on the supers, brother, and HOPE—for the honey flow is on again!

Perry, Iowa.

[Where Mr. Jessup in the fourth paragraph refers to tipping the hive over to examine the supers, an article in June 1945 Gleanings entitled "My Silent Assistant." by C. W. Schaefer of Middleton, Wisconsin, describes this method in detail. A ladder with a cleat at the bottom is placed against the hive and supers, then the pile is tipped back onto the ground. The supers are then pried apart, examined from the bottom and placed back on the pile.—ED.]

We Divided in April

By F. L. Shoemaker

The two chambered hive seems to be the accepted practice today. Some apiarists even advocate three chambers. In comb honey production, these two or three chambered colonies are usually reduced to a single hive body at the beginning of the major honey flow, to be reunited at its close.

Despite the popularity of multi-chambered hives, the single chambered hive has its adherents. Only the other day, in conversation with an aged and experienced beekeeper, on mentioning that for the first time we (my son Dick and I) were wintering several single chambered colonies, he enthusiastically replied: "You will like them! I am certain that you will secure as much honey from those colonies as from your double chambered colonies." Several other local apiarists customarily say the same thing. If they are correct, the single chambered hive is the one to use because of the saving in equipment, the greater ease of manipulation, the increased facility with which they can be prepared for winter, and therefore the larger number of colonies that can be handled.

Advantages of Double Chambered Colonies

Prior to this winter, we have used exclusively the double chambered hive. We have favored such hives for the following reasons: In the first place, since we form our double chambered hives in October by reuniting the brood chamber and what had been the food chamber, we really unite two single hives and therefore practically double the number of bees in each colony. (See "A Balance in Black", Gleanings, February 1946, page 72.) As a result, the winter cluster is much larger and the losses from exposure, dysentery, and starvation are greatly lessened. In four years we have not lost any double chambered colonies due to wintering and have had dysentery in but one. As for starvation, only two of our twenty colonies (not counting an observation hive) needed feeding in May, 1945, a month when most apiarists reported many starving colonies.

Secondly, since the cluster is usually formed in the space between the two hive bodies, the bees can use that space to move more easily back and forth between the frames. The practice of uniting two single hives, each packed with honey and pollen, results in an abundance of food both above and below the cluster. It is claimed that the cluster moves upward, not downward, yet it is hard to believe that hungry bees will not use food wherever it is found, whether that be above or below them.

A third advantage of the double chambered hive is the earlier brood rearing, encouraged by the larger bee population, the abundance of stores, and the increased size of the potential brood nest. Colonies with 4 to 14 frames of eggs and brood on April 1 are the rule in our apiary, the exact number depending upon weather conditions, strength of colony, and the laying qualities of the queen. On March 24, 1945, our strongest colony had 13 frames well filled with eggs and brood, while the average in the entire apiary was seven. An average of at least 16 frames of brood emerges in each colony during May, as compared with about 11 frames in a single chambered colony. The result is a much larger force of field bees for the June and July honey flows. Yet despite this larger bee population, the danger of swarming seems to be less because of the increased space for brood rearing and for housing of young bees and the possibility of Demareeing or of reversing hive bodies.

We were convinced of these advantages of the double chambered colony, yet we wondered about our friend's claims that the single chambered hive is the preferable one. We also knew that some beekeepers claimed that the merits of single versus multi-chambered colonies depended upon the region where the apiary was located.

Dividing Strong Colonies Early

Then it occurred to us, perhaps we could secure the major advantages of both the double and single chambered hives. We would divide several of our strongest colonies early in the spring. Accordingly, we sent for three queens to be delivered between April 1 and 15. The queens

arrived on April 2, 1945. The three hives to be divided had from 12 to 14 frames of eggs and brood. The 20 frames in each colony were rearranged. About 7 frames of capped and emerging brood and three of honey and pollen were placed in the food chamber, together with all attendant bees and the queen. This chamber was then provided with an inner cover, top, and bottom, and placed on a new location. The smallest opening in the entrance cleat was used and it was plugged with grass for four days. The remaining frames were placed in the lower or brood chamber and left on the old location. The new queens were introduced into these hives. Seven days later, all three had been accepted and were laying. We now had six single chambered colonies instead of the original three double chambered colonies.

The brood and queens were distributed as described for these reasons: First, the field bees would be more apt to remain at the new location if their queen was moved with them. Delay in removing the grass from the entrance also tended to make the old bees accept their new home. Secondly, some of the field bees would probably return to the old location once the grass was removed from the entrance. In the meantime, the emerging bees would tend to compensate for this loss. Furthermore, capped brood would be much less apt to chill than would the eggs and uncapped brood. Thirdly, the laying queen could lay in the cells from which the bees had emerged.

Results Attained

This past year our apiary averaged 100 pounds of comb honey for each of the double chambered colonies wintered. The three colonies divided in April produced a total of 630 pounds of comb honey, an average of 210 pounds for each of the three original double chambered hives, or 105 pounds for each of the divisions. The 17 colonies (observation hive not included) not divided produced 1400 pounds, or 82 pounds per colony.

The foregoing statistics are somewhat erroneous, however, because the three hives divided were the strongest, while the remaining 17 included all those which were average or below. Yet the highest production from any of the undivided colonies was 160 pounds, as compared with the 210 pound average for the three divided colonies. We estimated that 50 to 60 pounds more honey was secured from each of the divided colonies than would have been secured if they had not been divided.

Despite this increased production from these divided colonies, past experience indicates that only the very strongest colonies can be divided at such an early date with profit and security. To divide the weaker ones would probably result in total loss as far as honey is concerned and possibly of bees as well. Also, perhaps April 15 to May 1 would be preferable to April 1 to 15 for division in an average year. Warm weather arrived very early in 1945 and helped assure the success of the experiment. We are planning to divide our seven strongest hives this spring and will again check the records. The queens have been ordered for delivery between April 20 and May 1. A slightly different plan than the one described will be attempted however, a plan by which our single and double chambered hives will be used in a new combination.

As mentioned above, we are wintering seven colonies in single hives. If these colonies winter well and become strong by the time we divide, we will move them a foot or two to one side. The colonies formed from the food chamber will be placed at an equal distance to the other side. The entrances will not be plugged. The field bees, on returning to their old location and finding their hive gone, will have to select one of the two hives and should be about equally divided between the two. If properly done, all three hives should be of about equal strength.

An interesting time awaits the coming of spring.

Athens, Ohio.

[Mr. Shoemaker has his bees in a region that usually gives a fall honey, as well as an earlier flow when conditions are favorable. Obviously, dividing populous colonies quite early, about fruit bloom time would allow time enough for the divisions to build up to colonies sufficiently populous to store a good fall crop, especially when new divisions are given laying queens. Please note Mr. Shoemaker emphasizes the importance of selecting only very strong colonies for dividing.. —Ed.]

Feeding Bees for Comb Production

By Warren Whitcomb, Jr.,

U. S. Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine.*

It is generally believed that bees secrete wax more freely and construct more nearly perfect combs from foundation during the honey flow than at any other time. Beekeepers therefore place foundation in their hive during a honey flow and after the bees have gathered enough honey to become crowded for storage space. The combined influence of incoming nectar and shortage of room is supposed to stimulate bees to produce combs of better quality than either factor acting alone. It is also considered that during an intense honey flow a strong colony produces better combs than a weak colony.

During the slow honey flows beekeepers in many parts of the South have difficulty in producing good combs from foundation. Under these conditions combs are often incompletely attached to the frames, are not drawn to the bottom bar, or contain patches of drone cells. Combs of worker cells are usually obtained only from strong colonies during the peak period of major flows. The best combs are constructed when a few sheets of foundation are given at a time.

Combs do not last long in the South, because of damage by mice and the wax moth, because bees gnaw them badly during certain periods, and, particularly for package shippers, because of breakage from shaking and the frequent removal of frames from heavily propolized hive bodies.

Increased demands for package bees, honey, and wax have made it desirable for beekeepers in the South to find a dependable method of producing combs at a reasonable cost, to replace the poor ones, so that their colonies can work more efficiently. The method described below has been successful at Baton Rouge, La., and merits trial in other sections.

Method of Comb Production

A normal queen-right colony is selected and reduced to 2 hive bodies. Above this brood nest is placed a body containing 10 frames with foundation, and on top of this body is placed a feeder of some type from which the bees take honey freely. The feeder is filled regularly so that food is always available. The type or quality of honey fed is apparently not important, but the bees must have food available constantly. Usually no foundation will be drawn until the brood nest is crowded with honey. After that, however, 10 nearly perfect combs, partially drawn, can be removed and replaced by frames with foundation every 4 or 5 days. The combs are not fully drawn but may be termed "safe;" that is, the foundation is attached firmly to all sides of the wooden frame and the cells are drawn to about three quarters depth over the entire surface of the comb.

Ordinarily bees will store honey in such combs before they draw them further. There is little advantage in leaving combs on the hives longer than 5 days. They should be given to producing colonies for storage of nectar.

Experimental Work

Four queen-right colonies, approximately equal in population, called A, B, C, and D, were selected for the experiment. Each colony was reduced to two hive bodies on July 14, and treated as shown in Table 1.

The frames, wire, and foundation used throughout the experiment were from the same manufacturer. One hundred of the frames ready for the colonies were weighed in groups of 20 frames giving 10.2, 10.5, 10.3, 10.2, and 10.3 pounds, or an average of 0.515 pound per frame. The combs removed from the hives were extracted carefully to remove stored honey. They were then weighed, and the weight of frame and foundation was subtracted to obtain the amount of wax added by the bees during the period.

It was planned to feed colonies daily, but this was not always possible. It was soon determined that little wax was added to the combs after the fourth day, unless honey was being stored in them, and an at-

* In cooperation with Louisiana State University.

Table 1. Treatment of four bee colonies in comb-production experiment.

Colony	Honey Fed Daily	Frames of Foundation Each Period	Type of Feeder
	Pounds	Number	
A	6	8	4 division-board feeders, 2 feeders against each outside wall of hive body.
B	5	10	14 nuclei feeders in a shallow super. These are the feeders used in queen-mating nuclei.
C	6	6	2 wide division-board feeders, each holding about 2 qts., one against each outside wall of hive body.
D	6	10	14 nuclei feeders as in B.

tempt was made to remove the combs and give more foundation at 5 day intervals. Colony B was fed the same quantity of honey as other colonies, but it was diluted, 5 parts to 1 part of water, to determine whether a food more comparable to incoming nectar would stimulate comb production. After August 20 colony B received the same quantity and quality of food as did the other colonies. The honey fed was a type which, in 1941, could best be termed "unmarketable." It was dark, strong flavored, and so thin that it fermented in the storage tanks. The heat applied to prevent fermentation improved neither the color nor the flavor.

The results obtained from this work from July 14 to September 22, 1942, were given in table 2. During this period these colonies produced 488 drawn combs from 772.5 pounds of unmarketable honey. No drone cells were found in any of the combs. It is probable that more combs could have been produced without additional feeding if colonies A and C had been given 10 combs each period.

Discussion

It was evident that the colonies differed in comb production. Only a slight variation was noted between colonies in the quality of combs drawn, but there was some indication that colonies most efficient in wax production also built better combs. No evidence was found that the type of feeder, the quality of feed, or the number of frames given per period influenced the amount of wax produced.

A partly drawn comb, such as this experiment produced, contained, in addition to the foundation given the bees, from 0.065 to 0.398 pound of wax, with an average, for the frames drawn, of 0.188 pound of wax per frame. The variation in weight of combs was due in part to the number of frames given various colonies. Colony C, which was given 6 frames, produced nearly the same total amount of wax as other colonies given 8 or 10 frames. The feeding of 1052 pounds of honey, of which 279.5 pounds were later extracted from the combs, was required to produce 488 drawn combs, or an average of 1.58 pounds of honey per comb.

There was practically no honey flow during the test period. Scale colonies in the same yard which were weighed daily showed gains on only 10 days during the period July 21 to September 22, the maximum gain on any day being 2 pounds. There is no indication that incoming nectar affected comb production. The minimum temperature did not rise above 76°F. or drop below 66° except on September 21 and 22, when it reached 52°F., but for 12 days it dropped below 70°F.

The data in table 2 show that there is a delay between the start of feeding and the beginning of comb production. Colony A, which was more crowded for storage room than the other colonies, produced 0.89 pound of wax during the period July 15-21, but, with the exception of colony D which started producing on July 22, other colonies did not produce combs until July 25-27. Colony B was fed 35 pounds of honey diluted with water, and colony C was fed 42 pounds of undiluted honey, before any combs were produced.

Observations during a honey flow in 1943 show a similar lag between

the giving of foundation and the beginning of comb production. When frames with 1 inch starters of foundation were given, the delay was especially noticeable. When scale colonies in the same yard were showing gains of from 2 to 3 pounds daily, colonies given frames with ½ to 1 inch starters drew combs slowly and the combs were of poor quality. Drawing foundation during a honey flow presents somewhat different conditions than when feeding is practiced. The tendency to crowd the brood nest with nectar or honey and to curtail the egg laying of the queen is not so great at this time, and consequently fewer bees are forced into wax production. During the spring flow of 1943 both the quantity of comb drawn and the quality were inferior to that produced by colonies fed continuously with honey. Frames, without foundation or with ½ inch starters, placed alternately with drawn combs were often only partially drawn, were poorly attached at side and bottom, and often contained drone cells.

These observations indicate that under southern conditions better combs will be produced by colonies fed continuously and maintained for comb building than will be built by colonies given foundation during the usual slow honey flow. Since 1.58 pounds of honey were fed to produce a good comb from foundation, the cost, if 12-cent honey was fed, would be 19 cents. The cost of producing combs during the spring honey flow cannot be computed so easily, since honey must be used to produce the wax, because an unknown part of the colony population is diverted from honey production to comb production, and because the honey crop may be curtailed for lack of storage space while combs are being constructed.

Observations on Wax Production

In connection with the experimental work on this method of comb production some interesting data on wax production were also obtained. The combs from each colony were weighed for each period, the honey was extracted carefully, and the combs were again weighed to determine the amount of honey stored. Since little nectar was gathered during the test period, the weight of honey fed minus the weight of honey extracted gave a fair estimate of the amount of honey actually used in wax production. No data are available on the amount of honey stored or the amount consumed in brood rearing and other hive functions for any period; neither are there any data on the amount of wax used in other parts of the hives such as burr or brace combs, or comb built within the feeders. It is probable that any errors in weights of frames due to incomplete extraction of honey are compensated by the amount of wax used in other portions of the hive or by the amount of honey used in other colony activities.

The ratio of wax produced to honey consumed is shown in table 2. Colony D always produced the most wax per pound of honey consumed, with colony A next in production. Colony D produced 25.95 pounds of wax from 172.9 pounds of honey, or 1 pound of wax for each 6.66 pounds of honey fed. The other colonies produced 23.79, 21.07, and 21.09 pounds

Table 2. Combined data from four colonies of bees showing relation of honey fed to combs drawn and to wax produced, July 14 to September 22, 1942.

Period	Honey Fed Lbs.	Honey Extracted Lbs.	Honey Used Lbs.	Combs Drawn Number	Wax Produced Per Period Lbs.	Wax Produced Per Comb Lbs.	Wax Produced per Pound of Honey Lbs.	Cumulative Wax Produced per lb of honey Lbs.
July 15-21	92	0	92	6	0.89	0.148	103.37	103.37
22-24	69	0	69	18	1.93	.107	35.75	57.09
25-27	46	7.5	38.5	30	5.65	.188	6.81	23.55
28-29	46	12.1	33.9	26	4.29	.165	7.90	18.29
30-Aug.3	69	24.8	44.2	34	6.57	.122	6.73	14.36
Aug. 4 - 6	69	8.2	60.8	34	4.17	.123	14.58	14.40
7 -10	69	23.9	45.1	34	3.67	.108	12.29	14.11
11-15	69	16.8	52.2	34	3.87	.114	13.49	14.04
16-20	92	33.0	59.0	34	5.27	.155	11.20	13.62
21-24	71	27.5	43.5	34	6.87	.202	6.33	12.46
25-29	96	40.4	55.6	34	7.97	.234	6.98	11.61
30-Sept.4	24	14.7	9.3	34	7.87	.231	1.18	10.22
Sept. 5 - 8	72	14.2	57.8	34	6.17	.181	9.37	10.14
9-12	48	19.7	28.3	34	9.27	.273	3.05	9.26
13-17	48	13.4	34.6	34	7.77	.229	4.45	8.80
18-22	72	23.3	48.7	34	9.67	.284	5.04	8.40
Total	1052	279.5	772.5	488	91.90	—	—	—

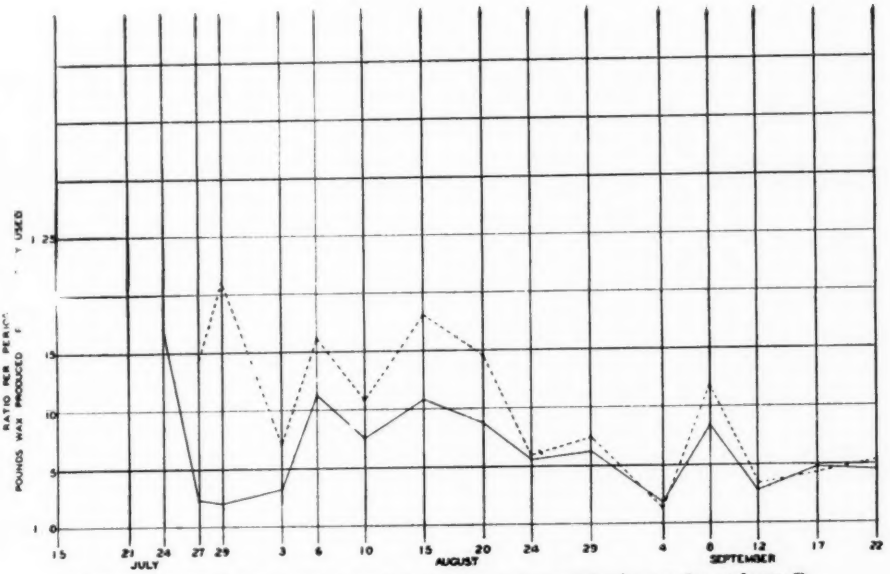

Figure 1. Pounds of honey used to produce 1 pound of wax by colony D (solid line), the most productive colony, as compared with colony C (broken line), the least productive.

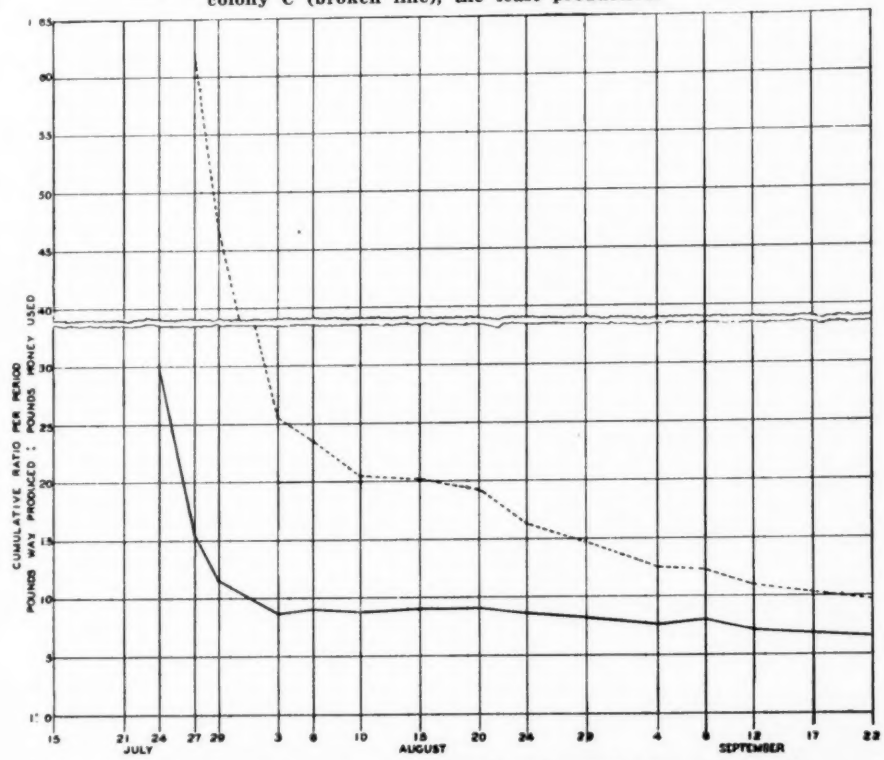

Figure 2. Cumulative pounds of honey used and pounds of wax produced by colony D (solid line), as compared with colony C (broken line).

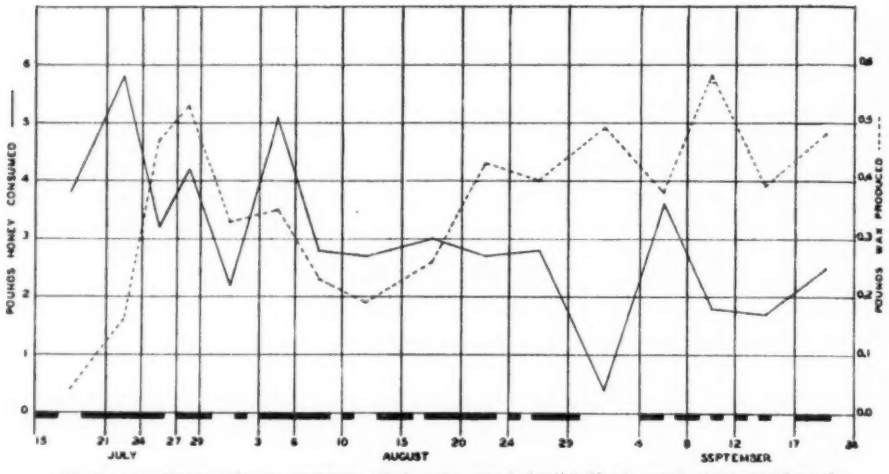

Figure 3. Four-colony average of honey used (solid line), and wax produced (broken line). The black bars at the bottom indicate the days on which the colonies were fed.

of wax during the same period, which figures do not differ greatly from the total production of colony D, but the amount of honey consumed or stored was greater, 193.4, 199.5, and 206.7 pounds for colonies A, B, and C respectively. The least productive colony used the largest amount of honey per pound of wax produced (8.80 pounds), the most productive used the least (6.66 pounds), and the average for the group was 8.40. It will be noted that these ratios gradually decreased over the period of the experiment. Under present prices for honey and wax it would not be profitable to produce wax by this method.

Figure 1 shows the ratio between honey used and wax produced for colony C, the least productive colony, and for colony D, the most productive colony, and Figure 2 the cumulative ratio by methods for the entire test. While the variations differ in extent, the tendencies are the same in both colonies. In each colony the ratio of honey consumed to wax produced was high until the colony became honey bound, and then decreased continuously until the experiment was terminated.

Figure 3 gives the average daily honey consumption and wax production of the four experimental colonies. By this method of presentation some of the differences due to variation in length of period are eliminated. There is a direct relation between honey consumption and wax production even in the presence of abundant honey stores. After the colonies become honey-bound there is apparently a tendency for honey consumption to maintain a level at between 0.4 and 0.5 pound daily.

However, as shown by the cumulative ratios in Figure 2, there is also a tendency for colonies to become more efficient in wax production as the experiment progresses. Colony D, which started wax production earlier than colony C, produced one pound of wax to 8.55 pounds of honey consumed on August 3, and one pound to 6.66 pounds at the end of the experiment; and this colony showed much less variation than colony C, which had a ratio of 1 to 25.73 on August 3 and 1 to 9.80 on September 22. Whatever the reason for this increase in efficiency of wax production, the tendency was the same for all colonies, and the cumulative ratio of 1 to 8.40 is lower than former estimates. The curves for ratios by periods are not so smooth because of irregularity of feeding.

SUMMARY

In an effort to produce combs of good quality, a method was devised by which colonies were fed honey continuously, and frames with full sheets of foundation were given at regular intervals.

It was found that excellent combs partially drawn and firmly fixed to

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Detecting Evidence of Starvation by Examination of the Entrance

By R. E. Newell

Observation of the hive entrances will tell us a great many things regarding conditions within. Each season of the year tells a different story for we will find the activity will vary each month during the year. If we have used our powers of observation through the years, we are in a position to note any unusual activity when something is wrong with a colony. The writer usually makes it a point when visiting an outyard of bees to walk along the rows of hives before opening a single colony.

1. Drone bees in this locality are present in all the hives during May, June, July, August, and the first part of September, and in some colonies may be found as late as November. A colony rarely kills off its drones in these months unless there is a shortage of nectar and no honey reserves in the hive. Therefore, when we see dead drones in front of the hive and on the bottom board during May and June we can be almost certain that the colony is running short of stores. This is the first stage of starvation and we will find upon examination of the frames that there are only a few pounds of honey and the queen may be slowing up in her laying of eggs.

2. A colony rarely kills off developing brood or larvae, or throws out the old worn out field bees when honey is plentiful. When we observe such evidence at the entrance we can assume that starvation has reached a critical stage within the hive. Examination of the brood frames will show that much developing brood has been destroyed, and parts of larvae and bees in the late stage of development have been consumed in part by starving adult bees. The queen has stopped egg laying, and there is barely a single cell of honey in the hive.

3. Dead bees in quantity found on the bottom board under the frames, and thrown from the entrance before the hive, is an unusual condition. We may find this condition in severe cases of poisoning, but never in a normal colony during the active brood rearing season. Therefore, when colonies are observed in such condition we may assume that starvation has reached a very critical condition. Examination of the frames will reveal that practically all the brood has been destroyed or neglected and even sealed brood has had the cappings perforated by the adult bees and the developing brood destroyed. No honey will be found in such a colony. The mass of bees lying on the floor board will show both young newly emerged bees as well as bees of field age, and some may be found still alive but in a weak condition. When handling the frames of such a colony, many bees will be found to be very weak and unable to attach themselves to the frames and will fall to the ground. Such a colony will die out within a period of 24 to 48 hours unless it is fed.

We all know that it is poor beekeeping to allow colonies to get into this condition. Ample stores pay big dividends. Honey in the hives is like money in the bank but pays much higher interest. However, the best of us are often caught in this condition if we are not on our toes. Observation of the entrances, therefore, is one way of forestalling the dangers of starvation in the initial stages before it reaches the critical point.

Heavy feeding of sugar syrup when drones were first found dead at the entrance prevented any ill effect on such colonies. Colonies in the second stage responded rapidly to the feeding, and stored nearly as much honey as normal colonies. The two or three colonies that reached the critical stages of starvation did not built up to storing strength for the clover, the queens did not appear to have suffered, but the loss of young developing brood and several pounds of adult bees put the colonies in an unfavorable condition. No colonies were lost by starvation.

In critical cases of starvation, sprinkling the bees with sugar syrup and filling the empty combs with syrup (sugar) and overhead feeding

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Stirring the Witches' Brew

To Burn or Not to Burn

By Leon C. Nieb

[Mr. Nieb is a college graduate and a beekeeper who operates bees in Michigan and Florida. He has had a wide experience with bees, having served as a bee inspector for some years. Mr. Nieb apparently approaches his project with an open mind. No one knows how it will turn out. If there is anything to this sulphathiazole for AFB we all want to know about it. That is what adds interest to his story. —Ed.]

The current beekeeping press contains much discussion about the efficacy of the drug, sulphathiazole, in the treatment of bee diseases. Desiring first hand information, we set out to investigate the situation this past season. From the evidence presented there seems to be much in favor of sulphathiazole.

I think it well to use caution in advocating anything as radical as the cure of an "incurable disease," as in the case of American foulbrood, which has been so regarded for a long time. The human race is afflicted with many diseases formerly regarded as fatal, which now do not result in fatalities if proper medical and surgical care is given the patient in time. Has the time come when this is true of American foulbrood in bees?

In the apiary inspection work since 1935 I have had the opportunity of examining thousands upon thousands of colonies of bees and finding disease in hundreds of them. It has been my duty to burn and bury this diseased material. This I have done with a clean conscience, for up to now it was the only way we knew of to eliminate contagion. The shaking treatment in the hands of the expert operator was not a 100 per cent success, and in the hands of the careless and inexperienced was a positive menace to all bees within flying distance of the treated yard. Never will I forget inspecting the yard of one of these "shaking" beekeepers a few minutes after he had completed the shaking treatment of about a dozen colonies. The sight of diseased honey all over the ground and the treated hives, with bees robbing heavily from healthy colonies was not a sight to make me feel kindly toward this sloppy operator. Needless to say the rest of his outfit was badly diseased the next inspection. Not all beekeepers did it that way, but the percentage was too high.

The only solution of the enforcement agencies seemed to be in burning all diseased material as found, without recompense to the owner. The economic loss from such a policy has been staggering, though necessary, and the cost of the enforcement of such apiarian laws has also been high, costing some states better than $50,000 annually, year in and year out. In no state, to my knowledge, has the work of inspection been 100% effective.

As I stood over countless fires in the past decade listening in many cases to the vilest vituperation being heaped on me, my associates, and my employers, I often wished that something could be done to make it unnecessary to so cruelly destroy those bees and their equipment. It was a shame, but what could we do? If we did not destroy disease when we found it, it would destroy all bees. Burning could only be justified as a necessary evil. I love beekeeping, and as a class I like beekeepers, and I felt sorry even for those who abused me. All beekeepers did not rant and rave when their bees were destroyed. Many knew that there was no other way out, and they were willing to cooperate all the way. What are those decent chaps going to do now that a cure has been announced? Ten years from now are we still going to be cleaning up by the rule of the pit and the faggot? "Cures," so called, have been advocated before. They have failed miserably. Can it be that now we can put our trust in something other than the torch and utter destruction? Is the dawn of a better day approaching for disease plagued beekeepers? If this sulphathiazole treatment will stand the full light of day, we, as beekeepers, want to know about it. If it will maintain healthy colonies of bees in disease ridden territory we must know about it, for in many parts of the country beekeeping is hardly profitable due to the awful toll taken by bee diseases. If there is anything of value in this treatment it should be given to the beekeeping public,

and if it is valueless we should know that also.

Hearing of the success some had reported in clearing up disease, I spent considerable time this last summer and autumn in examining the claims made by beekeepers large and small in many states and under different beekeeping conditions. The results of my investigation amazed me. I have yet to talk with anyone who has had negative results with the treatment. All were enthusiastic over the results and the possibilities. Shall we pause for a few moments and listen to the statements made by these broad-minded beekeepers?

The first man I interviewed lived some 700 miles from my home and I talked with him at his place because I wanted to see first hand what he had done. This man was operating bees in the thousands of colonies in three states. The first experiment of his that I wish to report had to do with a large lot of package bees hived last spring on combs rotten with the dead remains of larvae killed by AFB. Each package was installed on these combs of scales and fed syrup medicated with sulphathiazole. Feeding was continued up to the start of the honey flow. During this time they cleaned up the combs of diseased material from the bees which had died there. They were under constant observation until fall, and during that whole period not once did disease rear up its ugly head. They were hived in filth, but cleaned up the mess and stayed clean. His second experiment had to do with a whole yard badly diseased. These bees also cleaned up after a few weeks of "doctoring."

In one of the Great Lakes states I visited another beekeeper, who last spring found two colonies of AFB in one of his apiaries. He divided these two colonies, making four of them, so that he would have a larger experiment. Sulphathiazole was fed in syrup and when the bees were inspected some six or eight weeks later by a state apiary inspector they were found to be without fault or blemish.

Several hundred miles from the last mentioned case lived a queen-breeder of national renown. He reported that while he had no AFB, he did have occasion to treat several colonies afflicted with "bee paralysis." They cleaned up in a few days after receiving a feed of sugar syrup and sulpha. I could relate many more cases of similar nature. In all these cases the bees cleaned up. Will they stay clean? I do not know, but let me point out that if by treatment we can remove the bad effects of the disease, then we need not fear that it will do serious damage even if it does recur. A few cells of sacbrood is not regarded with horror by those who know what it is, for seldom are its effects serious. If foulbrood never showed more than a few cells at a time it would not be considered dangerous. Unfortunately, to date it has not acted that way, but has grown progressively worse, until finally when let run its course, the life of the colony is forfeited.

Now, I believed the reports of these men I have mentioned. The word of all of them is good. There was no incentive on their part to make a false report. However, personal experience is a better teacher, so I determined to examine this situation to my own personal satisfaction. Remember, I have been one of the "firemen" of the industry. I would not change my views, even as a "doubting Thomas," until I could prove to myself that there was a better way. Therefore, I set about to experiment as soon as I could locate some diseased material.

Next month we will tell you how we mixed the "witches' brew" and set out to prove or disprove the claims of those who say we don't have to burn in all cases any more. If you are at all interested follow this experiment in the columns of this magazine in the months to come. We are going to let you in on a little secret. As we write this, the first of a series of articles to appear from month to month, we do not know how the experiment will turn out. We haven't carried it completely through as yet and these articles will take on the nature of monthly reports until a conclusion is reached. We are in the dark as much as you are.

New Smyrna Beach, Fla.

(To be continued)

Honey Fancies

By Mrs. Benj. Nielsen

There are times when we do like to have our edibles a bit on the fancy or dressed up side—when we are planning for company, or when friends drop in unexpectedly. Opening a can of this or a jar of that usually is the emergency way. However, it is so much nicer to be able to add a distinctive honey-way touch (and a good boost for honey.)

The meat and pear salad recipes included this month are two such happy thoughts with superb flavor blends. The molded salad is one of those prepare-ahead-of-time joys so dear to busy homemakers. And if you make a practice of keeping pie crust on hand in the refrigerator, the cherry tarts are a dressy treat prepared in a twinkling. The pie and Sun Bonnet Sues are out-and-out fancies requiring previous planning and preparation and decidedly worth it!

Sun Bonnet Sues

One-half cup sugar, ½ cup honey, ¼ teaspoon salt, 1 teaspoon vinegar and 5½ cups oven-popped rice cereal.

Cook sugar and honey, stirring only enough to prevent burning, to a temperature of 270 degrees F. (hard ball in cold water). Remove from heat; add salt and vinegar. Put rice cereal into large buttered bowl and pour in syrup; mix well. While hot form into egg-shaped balls, and insert a skewer in each ball. Make bonnets from circles of crepe paper and fasten to balls with pins or thick sugar syrup. Yield: 20 balls.

For the salad place well drained honey canned pears on crisp lettuce cups. Stuff large cooked prunes with granulated honey or a mixture of granulated honey and peanut butter; place in each pear cavity.

Honey Glazed Meat with Vegetables

One 12-ounce can commercially canned meat, ¼ cup honey, ¼ cup fruit juice and whole cloves.

Score meat diagonally and stud with cloves. Brush with honey and add the fruit juice. Bake 30 minutes in moderate oven, 350 degrees F. Serve with cooked green lima beans, cooked carrot strips seasoned with chopped parsley and butter. Serves four. Tossed green salad is an ideal accompaniment.

Honey Cherry Tarts

Two cups pitted sour red cherries, ½ cup red cherry juice, ¼ cup honey, 4 teaspoons quick-cooking tapioca, 1 teaspoon lemon juice, and pastry.

Line 6 tart shells or muffin pans with pastry, rolled thin. Combine cherries, juice, honey and tapioca in saucepan; bring slowly to a boil. Remove from stove. Add lemon juice and let cool. Pour into unbaked shells. Top with two criss-crossed pastry strips. Bake in hot oven, 425 degrees F., for 10 minutes; reduce to moderate (375 degrees F.) and bake from 25 to 30 minutes.

Honey Perfection Salad

One tablespoon unflavored gelatine, ¼ cup cold water, 1 cup hot water, ¼ cup honey, ½ teaspoon salt, ¼ cup mild vinegar, 1 tablespoon lemon juice,1 cup celery diced, ½ cup cabbage finely shredded, 1 pimento, chopped, or two tablespoons sweet green or red peppers.

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Sun Bonnet Sues
Photo courtesy Kellogg Co.

Live and *Learn*

By Propolis Pete

A package of bees can be the most goshawful piece of equipment to a rookie beekeeper.

You place the order, and count the days until the package is shipped. You read everything, ask questions, and probably go through the motions in practice with an empty hive, to make sure that you know all the manipulations. You are entirely confident that when the package arrives, you will handle it like a veteran.

But there will come a day when the expressman will deliver to you one cage, wire, with bees, complete. You will look at it and feel the confidence evaporate. You will wonder just what to do first. You will fall all over yourself in fear and trembling, each finger a thumb and each hand a wooden club. What appeared to be so simple on paper immediately becomes a hazarous undertaking, requiring first of all fortitude, and much ingenuity.

Anyway, that is how it was with me. I sat down beside the package again with my book of instructions. I checked over everything to see that it was all right. Here was the hive with five frames of carefully wired foundation. There was the package of bees. There was the picture of the man in his shirtsleeves, and no other protection. Here was I, in a pair of rubber boots, with my pants tucked down inside of them, a pair of canvas work gloves on my hands, dug up when I lost my nerve, and a pair of footless socks over them to keep my sleeves from being too attractive to any wandering bee, and many folds of mosquito netting around my face, because in my prebee bravery I had decided to dispense with a veil. Also a leather wind-breaker, because I didn't know yet that bees seldom sting through a light cotton shirt.

An hour or so had been spent in painting sugar syrup on the sides of the cage. I didn't know yet that this might hurt the tongues of the bees, and that it would have been better to pour the syrup on them, or better yet, spray it on them. Anyway, I was ready to put them in the hive. The wooden block over the bottom of the feed can came off easily, and I began to gain confidence. I turned the package upside down to let the can slide out, and nothing happened. The bees had glued it in place, but I didn't know what was holding it. I got a pair of nippers, but all I accomplished was to punch a hole in the can, and all of the remaining syrup ran out all over the bees. I thought that that was bad, because I didn't know yet that it did no harm to get the bees all slobbered over with syrup, in fact, many beekeepers did it on purpose to quiet them.

Anyway I finally got the can out with the nippers, but more of that later. If I had known what I know now, I would have simply turned the package over, and bounced it on the ground, while holding my hand over the hole where the can was to come out. This would break the wax that the bees had plastered all around the edge, and the can would have come out, to be caught with the free hand before it got more than half way out, so that no bees would follow.

When I finally got the can out, half of the bees came with it. They thought that this was a golden opportunity to do something that had been bothering them for some time. I was underneath the circling bees, covered with the ones that were not circling, and full of evidence that they needed a flight.

Dimly I remembered that they would cluster with the queen, so gingerly the queen cage was removed, and laid on top of the frames of foundation in the open hive body. I don't know how I did it, but somehow I got a nail poked through the candy in the queen cage. For once I did the right thing. After ages (ten minutes by the clock) the bees started to cluster around the queen. I put the now half empty package in the open space remaining in the hive, with a couple of sticks under it to keep from crushing bees, and tried to put on the inner cover. It wouldn't go. I figured that I was violating some kind of a rule, but had to get that cover on somehow, so I put it on upside down. It worked. Now the queen cage was within the hive. and the cover would fit.

After that, it was easy to put on a

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An All-wood Shipping Cage for Package Bees

By E. R. Root

[A discussion between Allen Latham, Norwichtown, Connecticut and E. R. Root with Warren Whitcomb, Jr. in charge of the Bee Culture Laboratory at Baton Rouge, Louisiana, as referee.]

Allen Latham has been one of the consulting editors for ABC & XYZ of Bee Culture for several editions, and his footnotes will be found in various pages of late editions of the work. Several years ago, we published in Gleanings a series of articles under the title of "A Confab," the dramatist personae of which were Mr. Allen Latham and the writer. The purpose of the discussions was to bring out actual facts in the life of the honeybee.

During the last few weeks another "confab" between the fore-mentioned persons has developed through correspondence, this time over the form or type of a bee shipping cage. The writer held that the standard cage with wire cloth on two or four sides, top and bottom, made of wood, was the best type adapted for the shipment of bees across the country. Because of changing temperatures from hot to cold and cold to hot, the bees, I argued, needed a large amount of ventilation. Wire cloth is cheap and light, and experience seemed to show that a cage which provided a maximum amount of ventilation through wire cloth in the sides and ends was the "ne plus ultra."

Now comes Allen Latham who had sent to our Medina office several new types of cages made almost entirely of wood with very little ventilation in the bottom of the box through a narrow strip of wire cloth.

As I had been all over the South, had talked with package bee men, heard their discussions and we have had a large business in shipping bees ourselves, I told Mr. Latham that while he was usually right, I felt this time he was all wrong. Letters went back and forth and finally I got to the point where I quoted the old Quaker—"All the world is crazy except me and thee, and sometimes I think even thee is crazy." I did not exactly accuse my friend of belonging to the lunatic class, but I thought if the shoe fitted, he could put it on. He came back not saying "I think thee is crazy," but insisted that bees did not need so much ventilation and he contended it should come from the bottom. I countered by saying that his cage was very heavy, and it would add to the express charges and that wood was now high priced while wirecloth was cheap and light.

I knew that the Southern U. S. Bee Cultural Laboratory, Baton Rouge, Louisiana, with Dr. Warren Whitcomb in charge, had been doing experimental work in shipping bees and observing the results.

To settle the matter I sent one of Mr. Latham's cages to Dr. Whitcomb feeling sure that he would support my position. His very diplomatic letter letting me down easy and supporting Mr. Latham in part is here presented:

Dr. E. R. Root
Medina, Ohio

Dear E. R., I am sorry for you and Mr. Latham and for myself for being drawn into this controversy on cage design. You undoubtedly have the losing side of the argument so far as the bees are concerned. Mr. Latham loses because from the shipper's standpoint the cage type in common use has advantages in size and weight. I am sorry for myself because I have been so much more interested in production of bees that I have neglected any study of the energy used by bees during shipment in the various types of cages. My experience is something like this: but I wish I could discuss it with you and Mr. Latham, whom I have never met, rather than putting my views on paper.

The commercial cage in common use was developed because it was **light in weight, small in size,** carried bees to destination **alive** and because the bees were visible for examination before, during and after shipment. This is about all the shipper demands and I have felt that with our limited funds and personnel there were more important problems than to determine whether the present cage conserved the energy of the bees. During the early years of the war when screen wire was scarce we carried some preliminary tests to use more available materials for shipping cages. In these tests we used perforated wood, plastic screen and similar substances. We knew from previous tests that Mr. Latham's cage, even with less ventilation than the present type, would carry bees satisfactorily, and often so quietly that the bees were thought dead. We found in our preliminary tests that in a darkened cage the amount of screen could be reduced to a one-inch strip along the two long sides of the cage. However, these cages were heavy and could not be examined at destination to determine the condition of the shipment. This

is an important point to both the shipper and the receiver. The experiments were not continued since we found that if wire screen became unobtainable the shippers could substitute plastic screen on their regular cage types.

As I mentioned before, there may be a big difference in cages in their ability to conserve the energy of the bees shipped. Simply because bees are alive at destination does not mean that a large proportion of their reserve energy has not been dissipated due to poor shipping methods. This phase has never been investigated so far as I can recall.

Bees ship very quietly in a darkened cage. It also seems probable that bees can control ventilation better when the air entrances to the cage are restricted. They have little chance to control air currents in the commercial cage screened on four sides. You may have observed that Caucasian bees close the hive entrance with propolis during the hottest period of summer. You certainly have observed how agitated bees are in a glass walled observation hive and how they quiet down when the wooden sides are placed over the glass and the hive is darkened.

There are three main causes for death of bees during shipment (and probably if we knew, for loss of energy) and these are starvation, high temperature and poor ventilation. Interaction of these factors—one factor aggravating another—makes it difficult to evaluate them separately. The large expanse of screen in the commercial cage aims to provide adequate ventilation but, during periods of high temperature or when bees are excited, they cluster on the screen and cut off all ventilation to the interior. The darkened cage has a definite advantage here. Our tests indicate that a darkened cage can be smaller than an open cage and that bees may consume less food during shipment but these tests have not been extensive enough to be conclusive. The three main criticisms of the cages similar to Mr. Latham's are weight, inability to see the bees before or after shipment, and, at present prices for lumber, cost. Both shipper and receiver like to see the bees and to be able to feed them through the screen if necessary. They are also satisfied with the ability of the commercial cage to deliver bees safely.

I do not know what materials may be available for cage manufacture after the War is finally over. The present cage is satisfactory, but far from perfect. A returnable cage would be a labor saver for shippers although shippers keep their help busy during off periods which is a benefit. I do know that studies on cage design broad enough to be conclusive would take time and money and travel quite impossible under our present budget and, judging from the satisfaction of shippers and receivers with the present cage, I feel that there are other problems of more immediate importance. Mr. Latham, as usual, is doing some good work and I wish he would write more.

Warren Whitcomb, Jr.
Division of Bee Culture

While Dr. Whitcomb supports Mr. Latham's position of keeping bees in the dark while in transit (at that point he is probably right), he agrees with me that weights, express charges, and the cost of lumber are bottlenecks that will prevent the commercial adoption of the Latham type of cage for some time to come if not indefinitely. Since the war, the price of lumber and manpower has gone up. There is yet no substitute material in the form of plastics or fiber board that is as cheap as present, high-priced lumber.

Again, the condition of the bees in a dark closed box, as pointed out by Dr. Whitcomb, cannot be determined on arrival at destination like bees in an open wire cage. The open cage with wire cloth sides showing live bees will insure careful handling on the part of the employees of the express companies for safety's sake. A closed cage, not showing the bees, would not have the same care in transit.

In spite of these series of objections, I am inclined to believe there is merit in keeping bees in the dark if possible. One does not dare predict at this time that a substitute material cheaper than lumber cannot be found to take the place of lumber for house building, for hives or for package bee cages. The ratio in cost of the cheaper substitute in place of higher priced lumber will be about five to one in favor of lumber.

However, Mr. Latham is to be commended for the courage of his convictions. If he is right it is a goal we should keep in mind. When bees get excited because of lack of air or too much light, there is probably a loss of vital energy with the result that the bees dwindle in numbers very fast and the owner wonders why.

From the Field of Experience

COLLECTING POLLEN IN ADVANCE FOR FEEDING PACKAGE BEES

By H. S. Rogers

Last summer when we were planning on buying package bees for this spring, the talk about feeding pollen supplements made us decide to try it on the packages to see if it would build them up faster. The recipe called for pollen mixed with the soybean flour and sugar syrup. We had no pollen traps and upon cnsidering the matter decided to let the bees trap the pollen themselves.

We divided the double brood chamber with a queen excluder, putting capped brood below the excluder, the young brood and queen above it. We gave the upper brood chamber a top entrance. The bees below the excluder filled their combs with pollen quite solidly, but with some honey too. These combs were saved and given to package bees this spring, or in case an occasional comb was not too well filled, two to each. They seem ideal for the purpose.

Then we made up our soybean flour and syrup pancakes without the addition of pollen and let the bees do their own mixing. The package bees seemed satisfied and went to work vigorously.

Chicago, Ills.

CAN THE BEEKEEPER BEAT THE WEATHER?

Anonymous

Mark Twain seems to think it can't be done. The beekeeper has blamed the weather for the bees not being able to get to the sources of nectar—either it was too wet or it was too cold.

Or again, the government would not give him any sugar for spring feeding.

Now here is something to think about. Is the sap of the tree, be it maple or any other source, of the same consistency as the nectar which is found in the flower of that tree?

If so, why not ensure **a sure spring source** by gathering some of the sap and feeding it back?

But "the sap will ferment quickly," somebody will say. True! But boil it a little before feeding it back to kill the ferments.

And feed it back in the open in a trough made of tar paper or of roofing paper.

But somebody will say that "the sap comes first." (before the flower). True again!—that is your insurance.

If the weather is good and the bees can gather later, so much the better—they will have an additional spring source. We have all seen the bees working on sap when they can get to it.

If something could be done along this line, the beekeeper might, with a little extra work, **be always sure of having a spring source of nectar.**

Think about it, and then do something to beat the weather. If the bees cannot go to the source of the nectar, bring it to them.

AN ALLEGED HISTORICAL ERROR

By T. M. Dobrovsky

On page 471 of the November, 1945, issue of the Gleanings is a cartoon entitled "Strange Facts About Bees" by J. Bishop. Mr. Bishop claims that "In 484 B.C. The Turks Used Beehives to Thwart Hostile Crossings of the Danube". There is a slight historical error of approximately 1800 years in this statement as no Turks were present on the Balkan Peninsula until the Thirteenth century A.D., the final conquest of that area being completed in 1393 A.D. I do not wish to detract fram the general interest of Bishop's cartoon but submit the above for the sake of accuracy.

New Orleans, La.

GEESE AND BEES GET ON WELL TOGETHER

By Daryl E. Beard

I keep 30 geese in with my bees and I must say that it works out very nicely; the geese keep the grass and weeds right to the ground. They were kept together all summer and I saw only one goose get stung during that time. That was right at first before the bees got used to the geese passing by the hives. At times the geese would be all around the hives and I never saw the geese molest or pick at a single bee. I think the geese are worth having just to keep the grass and weeds cleaned up around the hives.

Sycamore, Ohio.

[Some time ago we had a report about geese being stung by bees on clover blossoms which geese plucked in a pasture near an apiary. The writer inferred it would be inadvisable to have geese near bees. Mr. Beard's experience is different. —Ed.]

OBSERVATIONS OF AN AMATEUR BEEKEEPER

Bees Like Boy Scouts Do Good Turns Daily

By C. O. A. Kramer

I think that we all agree that as amateur beekeepers we get a lot of enjoyment out of our hobby. It might also be well to consider some of the benefits we unconsciously bestow. When a honey harvest comes along, and we give a comb or two to this neighbor or a nice sparkling jar of extracted honey to the neighbor across the street we feel like kings scattering largesse among our subjects. Most of the recipients of our largesse really do enjoy the honey and we know it smooths over a lot of little irritations during the season that we won't hear about because of the gift of honey. We know folks like the honey because they thank us for it and usually come back for more. But there are other things that the bees do for us and our neighbors that are of greater importance than the small donation of honey. I refer to the importance of the bees as pollinators in garden, orchard, and farm, where the usefulness of our little friends "brings forth fruit a hundredfold", as the Good Book so aptly phrases it.

A little to the north of me is a neighbor who has a couple of apricot trees in his backyard. These trees have been there for about 20 years and have seldom borne fruit, and then only a few scattering specimens every two or three years. However, during the five years that I have had my hives located on my grounds, these same apricot trees have yielded bushels of fruit each year. When I told my neighbor that I intended moving my bees out to my country place next spring he said that he would willingly give me half of his crop if I would just leave one hive in my back yard for his apricot trees.

Another neighbor raises snapdragons as a hobby. For years he has had to buy new seed every spring and raise new plants under glass, because, although these plants reseed themselves, the amount of seed produced heretofore has been very limited. For the past three years he has had such a liberal crop of seed that it was unnecessary to raise additional plants under glass. His thousands of seedlings more than took care of his needs and he gave away his surplus plants this year by the hundreds. When his snapdragons are in bloom my bees literally swarm all over his garden and he has voiced his appreciation in no uncertain terms.

For many years my neighbors all about me have had small vegetable gardens. Last year, with the bloom in Victory gardens, many had increased their gardens considerably. One neighbor put in about 60 tomato plants and his crop was so plentiful that, while less fortunate folks were paying several dollars a bushel for tomatoes, he offered them to us as well as our near neighbors just for the picking because, as he said. "If it wasn't for your bees we never would have had such a crop."

Even the wild flowers in our neighborhood have been helped by the bees. For years there was a small patch of blue bells in the woods just back of my place, containing a few hundred plants that bloomed just before the snow left the ground. Since I have had my bees I have noticed that they paid many visits to these little plants when they were

in bloom, especially on those warm days that come to us occasionally in the early spring. Last spring there were thousands of these plants and I noticed that practically every blossom produced a seed pod, whereas formerly there were only two or three, thus proving beyond the shadow of a doubt that the visits of the bees greatly assist in the increase of our native wild flowers.

Quite recently, I talked with one of the men in charge of the Cook County Forest Preserves in charge of wild life, and he mentioned the fact that many of the wild flowers within the radius of a mile and a half of his laboratory (which is located just a few squares from my residence), had increased greatly within the last four or five years. He also stated that he had noticed a great increase in the number of bees visiting many of these wild flowers and attributed the increase in wild flowers during the above period to the greater pollination induced by the visits of these insects, and the consequent increased production of seed. In fact, he offered to provide all the space I needed if I would move some of my hives nearer to his laboratory.

I feel that my bees, like Boy Scouts, are "doing their good deed every day" and that the occasional complaint that "bees are coming into the kitchen when I cook tomato preserves" is more than overbalanced by the blessings they so freely bestow in many divers ways.

River Forest, Ills.

UNTIL STANDARD HIVES RETURN

By C. L. Boyd

When the reply came from the last supply house within reach that standard hives were not to be had, something had to be done to take care of the few swarms that were sure to come with the spring. A visit to the corner grocery store solved the problem.

Apples are shipped from the orchards of the great Northwest during the winter season in sturdy wooden boxes containing one bushel of the fruit. The size of the box looked to be quite that of an eight-frame standard hive. A trial proved a standard full-depth frame will set squarely on the top of each end of the box with ample space around the end bars for bees to pass in their work. And the box held eight frames, properly spaced, snugly. A small nail at the ends of each of the frames held them in proper place, and the bees could pass around each end bar with too much space to deposit propolis, but not enough to encourage comb building.

The wood of these boxes is soft, and rather thin. Instead of painting the boxes, tar paper was cut and tacked to the sides and end to protect them from rains and to prevent swelling and pulling out of shape.

These hives will be used only in an emergency, and when standard hives are available they will be used again. Swarms that must be given a new hive will be given these temporary quarters with eight frames of drawn combs, or full foundation. When standard hive bodies are to be had, the frames will be taken from the temporary hives and placed in standard bodies and placed on the same stand.

In cases where eight-frame bodies are used, a new body will hold the eight frames in the make-shift hive. But if the standard ten-frame hive bodies are to be used, five of the temporary hives will fill four of these bodies. Two of the make-shift hives will be combined by moving them closer together and then using the newspaper method, leaving all the bees in two of the smaller hives in one body, and distributing the eight frames among the four standard bodies, filling each of these bodies.

Each of the smaller bodies must be provided with a 1 by 2 inch strip nailed full length along the top of the sides and ends one-half inch above the tops of the frames on top of the ends of the boxes, to hold the cover at the proper height above the frames. A few one-inch holes bored at the bottom of one end, and two smaller holes near the top of the other end, will give ample room for entrance and proper ventilation. An old bottom board may be used to hold this temporary hive, or other bottom board provided.

Swarms saved by using these temporary hives will be put to work while standard hives are coming back on the market.

Waynesboro, Tenn.

SECOND GLANCES

By C. M. Isaacson

An orchardist's point of view on the use of bees for pollination of fruit acreages is found in Robert Clark's article (page 129), which should be given a careful reading. A group system of placing the colonies, rather than a single colony scattering, or one location for all, is strongly urged—and at least three colonies to every two acres. That rental charges should be kept low is of course desirable as suggested, but the beekeeper who moves his bees in has many "griefs" and likewise assumes a definite risk. This is really a matter for working out between the individual fruit grower and beekeeper. Most assuredly a close cooperation to avoid poisoning of the bees is desirable—the furnishing of water for each group of hives may often be a help.

Beekeeping is of value in many ways. W. A. Coulter, in his very well prepared article, shows this plainly. To know just where we stand in our operations is an advantage open to no argument, and when one adds the value of records for income tax returns, in case of fire. etc., the answer does seem to be in those two words—keep books. And if just beginning on it, keep Mr. Coulter's article handy for reference (page 132).

Attention to detail is a "must" of careful beekeeping (page 136).Clarence Tontz relates many interesting items. I chuckled when I read of the fate of the burlap entrance stuffing to that super pile. Yes, use cleats —mice like burlap for nest material! And to clean hive tools, if you don't happen to have gasoline to burn them, run each end repeatedly into the ground until propolis and wax are scoured off. It works—there will be slight danger of carrying disease on a shiny tool. Of course, when working in yards or colonies known to have disease, greater precautions should be taken. And don't feed sugar dry in the fall—bees are not active enough to be inclined towards it then. In the spring it works well often.

No immune strain of bees (page 138). It is well that the term "resistant" instead of "immunity" has been used, for as Mr. Holtz shows in his authoritative article, it is behavior characteristics of particular strains rather than inherited immunity that determines resistancy to AFB. Action of sulfa drugs is explained, in that they may give strains of this type an opportunity to clean up combs.

Bees aid alfalfa seed. That item on page 141 should be kept in a place of easy reference. Coming as it does from the U. S. Department of Agriculture, it may help much in convincing some stubborn individuals who believe that honeybees are "bad for alfalfa".

Better queens are needed. That paragraph in H. H. Root's report (page 143), is certainly correct. And the answer to the number of bees one man can care for—it does depend on the individual. That little trick for finding queens through the use of the acid cloth may be of real help at times.

The American Honey Institute page is full of interesting little items —just a small instance of the constant work done. Don't neglect to contribute in one way or another. It will pay you.

Argument for light packing—that colonies short of stores can be more easily discovered, sounds logical. It is very true that a heavy hive in the fall can somehow be very low on food in the spring. Unpack early if you are afraid of this (page 147).

Hive contraction was certainly a costly blunder, and the one time popularity of the system shows how much harm an ill-advised idea can do if pushed too hard. As Editor Root has so often said, don't be afraid of trying new ideas (progress would not come otherwise) but do so with some caution, and an eye to your local conditions. Then we shall avoid embracing that "door knob philosophy" (page 148).

Both blessing and curse—with emphasis a bit more on the latter. That seems to be Allen Latham's conclusion as to propolis (page 150). But both locality and strains of bees (not only "races") play a big part in this. Here, I have had no especial trouble with excessive propolizing.

Early brood stimulation may sometimes be an actual detriment. J. L. Byer gives an actual instance (page 159). If no increase is desired, and the honeyflow is late, colonies may well pass their peak and be on a decline, unless both excessive manipulation and extra food are used.

Middle River, Minn.

(I) From North, East, West and South

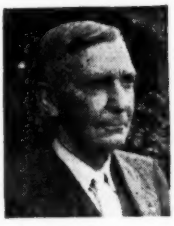
NO. CALIFORNIA, March 5

Weather: The February weather in the Bay Area was not quite what the beekeepers wanted. It was not the rain that they complained of so much as the many cloudy cool days we had. Many days were such that bees could not get out to reach the great wreaths of eucalyptus blossoms that were tempting them to get out and fill their hives with the honey that has grown so popular in the last few years. In fact, we have had more than our share of blocks of two to five days during the past winter without sun. The last half of February has been clear and warm and bees that were put into winter quarters right have made up for anything they lost by cool spells.

Outside of our district there is a heavy blooming of almonds, plums, and prunes. In the mountainous districts of the state the snow has been heavy, giving the nectar plants that perfect their buds under the snow a fair chance. In a few days the snow will be gone. Beekeepers will move in and for four or five weeks will see a busy time. Between the northern part of the state and Oakland there is a great honey producing section. The honey flow comes on later so we will not be surprised if conditions change there as the season lengthens. Today beekeepers tell us that some of the big producers have sold out and their bees have been moved away. If this is a fact there is a chance that other bees will be moved in. There is a more serious report of honey plants disappearing. Many bees have been lost by careless dusting of insecticide poisoning. At this time we look for a good crop of alfalfa and star thistle. Before this is in print our swarming season will have commenced. This, too, will have its effect on our crop for 1946.

Miscellaneous: One of the subjects carefully studied at our meetings the past winter has been the loss of bees caused by careless use of poisonous insecticides. Our losses have been great. Beekeepers know how valuable bees are to the ones who so carelessly scatter the poison. We know that the same or better results can be obtained by more careful use of the various insecticides. During the past week a very important meeting was held of the California Mosquito Control Association on the campus of the University of California. The use of DDT was the most important subject discussed. The three most important speakers were unanimous in their conclusion that America's most potent weapon against pestilent insects, DDT, can be used with comparative safety to the more beneficial insect if precaution and common sense are applied to its use. Will we all use common sense?—Cary W. Hartman, Oakland, Calif.

SOUTHERN CALIFORNIA, Mar. 2



Weather: We had only a few light sprinkles of rain during January and February. In Southern California there is an excellent chance for a dry season. During our 50 years in this part of the country, we have never seen the grass and grain with so little growth at this date. It seems to remain green but owing to the lack of moisture, it has grown very little.

Markets: There are all kinds of chances to sell honey, but who has any? There seems to be a growing tendency for brokers and other buyers of honey to venture out into the field of packing in small containers and supplying the retailers. Only time will prove the wisdom of the move. Our interests are still with the fellow who does the work and produces the honey. May he get his just proportion of the price the fellow who eats the honey has to pay.

Condition of Bees: In so far as we can learn, bees are in fair to good shape at this time. Where plenty of stores, 40 to 70 pounds, were left on the hives they are coming on fine. Where feeding has been necessary,

well, most of us know that it is uphill work at the best.

Miscellaneous: There are changes gradually taking place over the bee ranges of Southern California as well as in other parts of the country. When we came to these parts we looked for and had a right to expect a build up on alfilerae. In fact, we sometimes extracted some honey from that source. Then we had a few seasons where in some of our apiaries the sweet clover made quite a showing. One season we extracted some practically pure horehound honey.

Almond trees have been blooming profusely but the weather has been too cool for bees to get much benefit from that source. The eucalyptus, one of the most generally distributed trees that have been planted in Southern California, has been of considerable help to the bees whenever the weather has been warm enough for them to get out. Be ready when the flow comes.—L. L. Andrews, Corona, Calif.

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TEXAS, March 6.

Weather: Rainfall for February was normal in most sections of the state. Areas in which drouth prevailed for some months received some rain and moisture conditions have improved. While most of February was cool and cloudy the latter part of the month brought warmer days and the bees became very active.

Bees and Plants: Bees in most areas are in good condition and are now gathering considerable nectar and pollen and brood rearing is expanding rapidly. Reserve stores are decreasing, indicating the heavy daily needs of the bees. In sections where drouth prevailed earlier, colonies were weak and considerable feeding, including pollen substitutes, was necessary. The bees have improved and are gradually building up as nectar and pollen become available. Most bee plants were delayed in their development giving the bees a better opportunity later to take advantage of the bloom. Agrito (**Berberis trifoliata Moric**), one of our important bee plants, over a large area of the state is now in full bloom. Wild mustards and other annuals are furnishing considerable food for the bees.

Prospects: The blooming period of most of our major honey plants is not expected for some weeks. The plants, however, are now in normal condition, and give promise of at last a normal crop.

Miscellaneous: Queen and package bee producers are making preparations for a record season. Most breeders have started queen cells and shipments will be under way in a few weeks. There will be less shortage of help in bee work than there has been for some years and beekeepers generally will be in better position to keep up with their operations.

A number of apiaries are being sold and are finding ready buyers. Some people engaged in other business are becoming part owners in established bee firms. This reflects the confidence of the general public in the soundness of the bee industry. There is also a large number of beginners who are entering the bee business in a small way.

The Lower Rio Grande Valley is a unique beekeeping region. In three counties there are located upward of 30,000 colonies of bees. The flora consists of native plants, citrus fruits, and many other cultivated crops. It is an excellent early blooming territory, ideal for queen and package production. The bee operators consist of permanent resident beekeepers, northern honey producers who migrate south for the winter and spring, and resident beekeepers who became migrants north for the honey producing season. With such an intense bee population, overstocking and sharing of bee range, many local problems can be expected. It is surprising that under the circumstances any harmony exists. The beekeepers, however, have a very active association and several meetings are held per year. The last meeting was held during the third week in February and 60 members attended.

The annual meeting of the Texas Beekeeper Association will be held in June at Greenville, Texas. This is the first state meeting held since 1941. Beekeepers generally are very enthusiastic over the coming meeting, and North Texas beekeepers are making every preparation to make this the best meeting in years. The nearness of Greenville to three other states should also attract neighbors from across our borders. A more complete announcement relative to the meeting will be made later.—A. H. Alex, San Antonio, Texas.

ARIZONA. March 11.

The report in the February issue has covered the general conditions in the state very thoroughly. Losses last season were over 50% throughout Salt River Valley. My own losses were well over the 50% average. One group of beekeepers in Casa Grande are suing cotton growers in their area. This trial has been reset for March 29, in the Superior Court in Maricopa County, Phoenix, Arizona. It will be interesting to follow this suit, inasmuch as Mr. S. E. McGregor, of the U. S. Bureau of Entomology, from Tuscon, Arizona, has been called by both sides as a star witness.

During the winter months, the alfalfa pure seed growers held an important meetng at Tucson. At this meeting, Mr. J. L. E. Lauderdale, head of the State Department of Horticulture in the Bureau of Entomology, outlined the results of alfalfa seed growing with and without insect pollination. The main point of interest in the talk was that in about eight to ten generations of alfalfa almost devoid of leaves was developed, whereas alfalfa that was not caged was still good and leafy. One alfalfa grower advises us that where he has been buying his alfalfa seed promiscuously in the past, he is making sure in the future that he buys seed from establishments that guarantee that bees have been kept in or near the seed fields. He plans on growing a large acreage of alfalfa seed, and wants to make sure that we have bees on his place.

The time may not be far distant when the farmers will pay the beekeepers for the use of their bees for this work in pollination. Until now, we beekeepers have been happy to put our bees on a man's place only for the prospects of getting a crop of honey, but with the continued practice of poisoning our bees, how can we continue doing this? Many of the bigger beekeepers in the Salt River Valley will not move their bees back to the alfalfa fields this season because of the heavy losses in the past three years. Our state inspector, Mr. Paul Grant, and his partner, Mr. Cress Bayless, report a loss in excess of $10,000 last summer and fall. Losses are still showing up now from last fall poisoning.

We have not had sufficient rain for the "bumper" honey crop that seed kept from insect pollination an beekeepers look forward to, as yet. The build-up time is rapidly passing, and the early flowers have not been sufficient for good build-up of the bees. Early and abundant rains even now could save the beekeepers in this area.

With losses in excess of 50%, how, when, and where can we make that 8% increase which our government wants us to make? We cannot presume to say we know the answer—Roy Hastings, Mesa, Arizona.

In a recent letter to the Gleanings office, Jas. I. Hambleton writes:

Until seed growers and farmers in general realize the value of bees in pollination and are willing to pay for this service beekeepers will have to continue as they have been doing in locating colonies where they can get the most honey. As more recognition is given to the value of the bees, farmers and seed growers should at least loosen up to the extent of offering free apiary sites. As more information becomes available eventually the seed growers should be willing to pay for the use of the bees. I can conceive also that there are areas where it would pay to import bees for the special purpose of pollination, knowing that they would not secure a profitable crop of honey and where they knowingly would be subjected to severe poisoning. If a beekeeper undertakes to handle bees in such areas he, of course, will have to be paid for his services.

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WESTERN MONTANA, March 1.

Weather: Early spring of 1945 was cold and backward. Late in May it warmed up and colonies built up rapidly and came back to full strength somewhat ahead of the main honey flow, also the swarming impulse came with it, which is a condition not to be desired, in our judgment. The main flow was of short duration and the crop about 20 pounds below average. Bees went into winter with a good supply of stores and as January was mild (the weather bureau reports the mildest on record), bees started brooding and colonies will need close attention. Winter losses were slight and as most colonies were extra strong, stores will be consumed at an accelerated rate. The fall was unusually dry but at the present there is plenty of snow in the mountains and adequate moisture in the valleys.

Market: No sooner had we started

extracting than the demand for honey went on the rampage. To extract and market honey as fast as extracted, mostly from the door, for the first three weeks of the season, was quite a chore and held up our usual rate of taking the crop. However, it is encouraging to sell several hundred dollars worth of honey per day to eager buyers after the experience of a few years ago. There is almost no honey left in the hands of producers and stocks in the hands of wholesalers are low. The demand for 60's for home consumption is strong.

Miscellaneous: In many sections sweet clover is a boon to the bee man, but to a far less degree in western Montana. Our outfit is operated in four counties, being over 100 miles across, and we have no locations where we can depend on sweet clover for over one fourth of the crop. Some yards located where there is an abundance of bloom from both varieties do no better than the yards where there is a scarcity, and as there is alfalfa around all locations, we know that alfalfa yields best, the yellow variety of sweet clover produces best usually and has a longer steadier flow. The white variety some years yields heavily for a few days, but the main flow never comes on until alfalfa comes into bloom.

Soil is mostly bottomed by gravel and dries out quickly when hot weather comes on, notwithstanding irrigation, and this condition prevents long continued flows, but in localities where the soil is deep or heavy the flow lasts no longer.

The writer has kept bees for over 35 years and has made a more or less thorough study of bees and bee nature. About eight months of each year is spent going from yard to yard. We are almost forced to live among the bees during that time and have come to the conclusion that in manipulating colonies we must make the best guess we know how. Weather, strength of colonies, and strains of bees offer problems galore, and usually in the light of later developments we find that we had not guessed entirely right. The system that works well in one locality may prove a failure in a yard ten miles away. —T. J. Rowe, Arlee, Montana.

MASSACHUSETTS, Feb. 27

Weather: It has been a severe winter with considerable snow which has remained except for brief periods. During these short periods of no snow there has not been any thawing to destroy the clovers. Nearly a foot of snow covers the ground at this time.

Colony Condition: Bees had a good flight the first of January and again February 10. At these times the bees were very strong at the entrances, and the few hives that were opened appeared to be wintering well. Stores were of good quality, and we have wintered our colonies with generous amounts of stores because of the possibility of sugar shortage. The experiences of last spring where bees were short of stores has left a lasting impression of the importance of ample stores. Beekeepers in New England will not soon forget the effects of relying upon early spring honey flows.

Miscellaneous: A strong wind removed the covers from two colonies in one of our outyards, leaving the frames exposed for two days. The temperature was close to zero, and when discovered the bees were buzzing above normal, but there appeared to be no serious effects to the colonies. This was a rather extreme example of upper entrance. Some of our colonies are being wintered with two or three full-depth hive bodies, and some of these have an upper flight hole in each body. We left these all open to observe the results. While it is too early to draw any conclusions, these colonies appeared to be the strongest on the days of flight. The fruit growers have placed their orders for bees which has enabled us to prepare the necessary new hives and equipment for this purpose. We have ordered 35 3-lb. packages of bees to be used as booster packages or to be used to build up additional rentals if necessary. It never pays to rent more colonies than you can supply. Keep a reserve in case of any emergency, for a disappointed customer is no asset.

We have bought a small farm where we plan to develop our queen rearing operations. It slopes toward the East on the side of a hill, and has a fine flowing spring for the bees, and for our own use. The wood lot contains enough pine timber for the construction of a honey house, and storage buildings, etc.

Beekeepers are making preparations for this coming season, and it would appear that there will be a considerable increase in colonies by beginners and old timers as well. We will make an increase of at least 50 colonies. Pollen substitutes and plenty of stores may make it necessary to increase the above amount. —R. E. Newell, Holliston, Mass.

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WESTERN COLORADO, March 7.

Weather and Bees: One season has closed and another begun since a report has been made to this column. For that reason I shall go back to last fall in beginning. Our 1945 season ended with one of the best late flows in many seasons, which in many ways compensated for the trying spring and early summer conditions. Many of us failed to "catch" all of the possible crop. We are just not used to putting on supers in late August and early September in Colorado. This resulted in colonies being generally better provisioned for winter than I have ever seen them. In many cases queens were prevented from maintaining a normal fall brood nest by the bountiful amount of pollen and honey stored. Some concern was felt over this condition, but it seems to have been unwarranted for the bees have in most cases come through quite well in spite of the long cold winter. There was no flight of any consequence for over two months which was a particularly long period of confinement for sunny Colorado. There are, as always, the colonies that have consumed the abnormal amount of stores and will have to be fed, but most of the colonies observed last week had large clusters, many 1946 model bees emerging from as many as five frames of brood, and enough honey in the combs to last another two months. We shall begin feeding pollen cakes in another two weeks and that should be all the work necessary until the dandelion bloom.

Moisture Conditions about Normal. We have predicted a dry year time after time only to have a very wet March and April bring up the moisture reserve. We don't worry about that much, any more. We can't do anything about it anyhow. What we can do is to provide conditions in the hive that help make the bees independent of the weather and thus guarantee colonies that are able to gather a crop when the flow does come. Let's make more preparations for the good crops and thus be relieved of making so many excuses for the poor ones.. In looking over the yearly crop records for Colorado one can see that our irrigated crop conditions make for a favorable honey flow almost every year. It is true that we do not get the heavy flows and the bumper crops that the middle-western states have, but neither do we have the drouth or "too wet" years that bring almost nothing.

Miscellaneous: At this point I would like to comment on the excellent representation of beekeepers at the three large meetings that it has been my privilege to attend this winter. There is no doubt that beekeepers are prosperous. If they continue to study their problems, pool their information, and support the organizations that are working in their behalf, they are going to STAY prosperous. We do have problems in management and problems in disease control. But when we have the equipment for solving them they need not overwhelm us. We now have this equipment in our beekeeper organizations, which are functioning efficiently and will continue to do so as long as we continue to cooperate with and support them. Mrs. Grace has extensive plans for publicity for honey when it once begins to look as if we shall have honey enough for the demand. Production problems are in the particular realm of the National Federation. With Glenn Jones in full time study of these problems, aided as he is by the personnel of the various committees, much is already being done to bring better beekeeping conditions. At no time in my experience have the factors of success in beekeeping been so apparent. To keep this organization in a condition of ever increasing usefulness to the industry we must back it with our dollars and our thoughts.

Our Association meeting held in Denver this week was one of the best attended in its history. The presence of Mrs. Grace, Dr. F. B. Paddock, and Glenn Jones, on the program no doubt had much to do with its success. Each spoke interestingly of his work. Floyd Paddock gave us a good going over, but since he had gone to school in our state and had married a Colorado girl, was allowed to escape with his scalp. (For the benefit of Iowa readers: There actually were no blanket Indians in attendance.) Of course, we here in Colorado still want a State Apiarist and better bee laws. God willing, we shall some day have them.—John W. Holzberlein, Jr., Grand Valley, Colorado.

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MINNESOTA, March 10.

Weather: A long cold winter—Brr-r! **Honey Plants:** Most of Minnesota had a heavy snow covering through much of the winter, which would indicate that clovers are in good condition. Reports of less sweet clover than for years is an understandable result of the war need for other crops. Legume seeds are in strong demand. Ground moisture is good.

Bees: Apparently bees wintered very well, so far as can be judged today. Outside colonies had few flights until March, a circumstance that probably did the bees no harm. Many colonies were buried under snowdrifts for several weeks—and liked it!

Miscellaneous: A number of beekeepers report decidedly inferior quality honey on grocer shelves, especially in chain stores. Buyers for these stores apparently bought this honey on a price basis, and so received poor grade honey. But sometimes it is mis-marked "U. S. Fancy", and naturally consumers are disappointed, do not like it, become disgusted with **all** honey, and will not buy good honey as long as this poor quality honey is on the pantry shelf, perhaps not even then. Now, especially, bakers would be glad to get this low grade honey and store buyers should know they hurt their consumer trade to handle such stuff.

A short course in beekeeping will be held May 9 to 11 at University Farm, with Dr. E. F. Phillips and Dr. O. W. Park present. Also, a revised correspondence course in beekeeping may be had from the General Extension Division, University of Minnesota, Minneapolis 14.

Supply houses report a demand for twice the available supplies, especially wooden goods, and the outlook for metal and glass containers is not bright. Better order early.

Present honey stocks are shorter than for years. Prices and demand should be good next fall. It will pay well to take good care of spring feeding and other good management practices.—Bruce Morehouse, Montevideo, Minnesota.

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UTAH, March 9.

Weather: The state has had its quota of cold weather, but during most of February the days were clear and snowless. We need more snow. Most of the bees throughout the state had good cleansing flights early in February.

Crop: There is of course little or no honey left in the warehouses of Utah producers. The packers will be out of bottling honey long before the 1946 crop begins to fill extracting combs. A good part of the estimated 3 million pound crop did not get to the Utah packers. Much of it went to out-of-state buyers and more than usual went direct from honey houses to local home consumers in large containers.

Moving Bees: There seems to be a yearly shift in honey production among the chief producing areas of the state. Last year one of our best counties, Cache, fell behind, while many of the counties farther south that failed the year before picked up. As a result of these fluctuations, an increasing number of operators are moving from county to county and the number of winter migrants to the California orange groves is growing. We now have nine counties in which as many hives are moved as are left on year around stands.

This adds to the disease control problem. However, most of the men who have enough initiative to move also have enough interest to inspect often and to cooperate with inspectors in the destruction of AFB colonies.

Arsenic Poisoning: There were very few cases of arsenical poisoning in 1945. In fact, the few remaining yards in Salt Lake County, for years the county heaviest hit by arsenic, averaged 100 pounds per colony. It is of interest to note that the analyses of honey plants, bees, and air showed none of the startling bee-lethal doses of arsenic of the previous four or five years in the lake area of northern Utah. The only major changes observable in 1945 were added moisture, and the shutdown for over six months, of one of our leading smelters. Utah is said by agriculture college authorities to be a relatively light user of crop arsenicals as compared to other states. While some of our bee losses of past years connect with cases of dusting and spraying, data gathered during the war years points to contamination of the air by smelters as being a larger and larger factor. Arsenic in bee killing quantities has been found in the air and on the blossoms in summer and in the air and on the snow in winter.—Wm. L. Moran, Salt Lake City.

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ONTARIO, March 7.

Weather: March came in mild and gentle and has continued that way to date. With no apples, very little honey, and badly damaged fruit trees, as a sequel to the extraordinary spring season of a year ago, everywhere we hear people voicing their fear that the present warm weather looks as if we might have a repetition of the conditions of 1945.

Bee Conditions: The boys have looked over a few of our apiaries and find bees practically all alive. All appear to have lots of stores. But we found the same thing a year ago when we first examined the bees, but what a difference two months later!

The subsidy that has been paid on package bees for the last two years of 50 cents per pound will not be paid this spring. This will be quite an item in the way of increased cost, although neutralized a bit by the drop of the 10% war tax that has been imposed on all imports from the U. S. during the war years. A note from Ottawa, issued lately, states that in lieu of the subsidy, the price ceiling on honey will be raised slightly. Just what the amount will be has not yet been announced. Personally, we think that honey prices are high enough. What we would like to see, is a crop to sell at present or lower prices. Subsidies are also dropped on all jams, preserves, etc., and the price ceiling raised so that a two pound jar retails at from four to five cents higher than when subsidies were paid. While the paying of subsidies may be necessary to curb inflation, an immense sum must be paid out every year to meet these obligations taken on by the government.

Whenever we meet beekeepers, we hear the same note of anxiety as to what to do if bees use up their stores as they did a year ago, and beekeepers can get no sugar to feed after all honey saved over has been used. It looks as though it will be almost impossible to get sugar, although I did see one report that the western provinces would be allowed five pounds per colony.

We saved several hundred combs practically solid with buckwheat honey, stored at an apiary some 50 miles from home, the only place where we secured any late honey to amount to much. But if the bees use up all their stores before anything of account comes in, these few hundred combs would soon disappear if shared by something like 1500 colonies.

Miscellaneous: Clover appears to have wintered well but the acreage of alsike will be very small, I fear, as failure of this crop to furnish much seed during the past few years had discouraged farmers from growing alsike, which has been our chief source of nectar in York County where the majority of our apiaries are located.

Quite a number of returned men appear to be interested in regard to the future of beekeeping, and while the writer has in the past always been an optimist in regards to the future of beekeeping, frankly just now we cannot exhibit much enthusiasm in the way of encouraging young men to take up this means of making a living. Naturally there must be many locations that look better for future operations in beekeeping than do most of our present locations. If we happened to live in some of these favored locations, no doubt our pessimism would disappear.—J. L. Byer, Markham, Ont.

Eighty Years Among the Bees

By E. R. Root

As our readers know, I have been trying to show the mistakes of the past; of how even instinct can go silly; of how real genius can propose theories that give promise of something wonderful but later fall down in ignominious failure. It is because we can often learn more from our mistakes than from the few ventures of success that I have continued to harp on the follies of the early days.

A. I. Root, the founder of this journal, made Gleanings almost an instant success because he didn't hesitate to tell of his many mistakes. It was the rehearsal of these mistakes told as only Novice (that was his modest nom de plume) could tell them. Dr. E. F. Phillips characterized him in later years as the evangelist who, building on Langstroth, made the keeping of bees commercially possible.

There are some ideas so silly that they die as soon as they are born, but there are others that look so alluring that they live on for years to such an extent that their votaries try to blame their failures to a series of poor years, e.g., that intensive agriculture had absorbed all the clover pasture. The only remedy at the time was contraction and the Heddon divisible brood chamber as explained in the last issue. Now, I'll attempt to show up another idea almost as alluring and as full of promise. I refer to

Reversing Hives and Frames to Force the Honey from the Brood Nest Into the Supers

This looked so good and so promising that nearly every one fell for it. The craze began in the early eighties, and held sway in the bee journals for nearly ten years.

This was the argument in brief: As every one knew, the brood area in a full frame of brood, so-called, occupied only about two thirds of the space of a Langstroth standard frame. The brood would be in the form of a semi-circle seldom reaching higher than two inches of the top bar and then tapering gradually in a curve at each end. Above this downward curve there would be, in addition to the two inches of honey below the top bar, a triangle of honey in each upper corner of the frame. Here comes the crux of this wonderful idea. Turn the frame or all of the brood frames upside down and, presto, the bees would carry the honey upstairs and deposit it in the supers. New brood in the form of eggs and larvae would occupy space now above the brood which with the sealed brood would make one solid frame of all brood. When the sealed brood emerged and after young brood took its place, reverse again. By continued reversing one would have solid frames of brood from top to bottom and all the honey would have to go upstairs. To some extent, the theory was verified in practice. There would be brood and more bees to gather the crop with solid frames of brood from bottom to top bar and no honey below because the bees would put it above after reversing.

There was another talking point. One could kill all swarming cells and thus cure the swarming habit by simply turning the frame or frames upside down. How simple!

By far the strongest argument in favor of reversing was that the bees would fill new comb in the usual space of half an inch between the bottom of the comb and the bottom bar now at the top. This would leave no hiding place for a queen and the comb would be solid from top to bottom.

The idea of increasing the capacity of a frame of brood without enlarging the frame or the hive, killing queen cells went like a house afire and so a hoard of reversible frames and reversible hives came on the market in the middle eighties and some of them patented. (If the reader wishes to dig down ino history, ask for photostat copies from bee libraries from the following page references: Heddon reversible frame—Gleanings, page 104, 1885; J. M. Shuck's reversible hive, Gleanings, pages 626, 771, 1885; A. I. Root's reversible frame, Gleanings, page 157, 1885; and again page 550, 1886. Note A. I. Root was doubtful of the value of reversing.)

In the meantime, reversible hives were advertised. Why reverse one frame when the whole set of ten combs, hive and all, could be inverted in the space of seconds. J. M. Shuck got out a hive made up of two

(Continued on page 253)

Asked and Answered

Uniting Queenless Bees with a Weak Colony

Question.—What is the best way to add a queenless package of bees to a weak colony in the spring?—S. Blasczyk, Wisc.

Answer.—When adding a package of queenless bees to a weak colony. it is well to feed the weak colony, also the bees in the queenless package, sugar syrup before uniting. The queenless bees, when filled with syrup, may be shaken out in front of, or in, the hive containing the weak colony. The queenless bees are anxious to have a queen, whereas the bees in the weak colony do not object to the queenless bees so long as they are filled with sugar syrup.

Adrenaline for the Relief of Bee Sting Poison

Question.—Can adrenaline be used for the relief of bee sting poison?—Spencer W. Bradner, So. Dak.

Answer.—For critical cases, treatment consists of frequent hypodermic injections of a one-to-one-thousandth solution of epinephrine. The solution may be obtained from the druggist, or epinephrine tablets may be procured and kept at hand so that a fresh solution may be made very quickly if needed. Epinephrine, formerly known as adrenaline, is worthless unless given hypodermically.—Dr. W. Ray Jones, ABC and XYZof Bee Culture.

Queen Cells—Different Sizes

Question.—Do the size and shape of queen cells affect the queens that emerge as to their size, productivity, and characteristics?—Robert S. Turner, Iowa.

Answer.—Generally speaking, a queen cell of normal size results in a normal queen. Occasionally, however, a short or apparently stunted queen cell will contain a fairly good sized virgin queen. In producing good queens it is necessary that the bees have access to a normal amount of pollen and nectar, and that the weather is not too cool.

What to Do with Partly Filled Honey Sections

Question.—I have quite a number of partly filled comb honey sections. Can these be fed to the bees this spring? If so, how should it be done?—M. G. Emler, O.

Answer.—Partly filled comb honey sections may be fed to bees quite early in the spring after settled warm weather arrives. Place the super containing the sections underneath the brood chamber, just above the bottom board, quite late in the evening especially if very little nectar is being gathered. Giving the honey late in the evening helps to avoid the possibility of starting robbing. The bees will carry the honey out of the sections up into the brood chamber. In due time the sections will be empty and may be used later on for the storage of surplus honey.

Pasteurization Applied to Honey May be Misleading

Question.—In an advertisement for honey I read these words, "Our honey has not been processed or pasteurized". By this I assume some beekeepers practice processing and pasteurizing. Can you tell me for what purpose they do this?—Isobel Smucker, Ohio.

Answer.—The word "pasteurized" applied to the preparation of honey for market is somewhat misleading. It is all right to apply this term to the preparation of milk for customers. The word pasteurized may give the impression that honey is somewhat comparable to milk which actually does need pasteurization. As a matter of fact, honey is altogether different, because some organisms that are detrimental to human beings will not live in honey. However, honey needs to be strained and clarified before being put into bottles. The word "processed" is the proper term to use.

Wages Paid an Apiary Helper

Question.—About how much should I receive for working in a commercial apiary of about 1200 colonies run for extracted honey? The location is in a northern state. Board and room are furnished. The owner is willing to teach me the business.—Charles Eddins, Ky.

Answer.—The wages one should receive as a helper in a bee yard should be somewhat in line with wages paid farm workers in the locality. Beekeeping is a branch of agriculture. An experienced beekeeper would naturally be worth more than an inexperienced beekeeper.

Don't Put Bees in the Hen House During the Winter

Question.—In December we moved a hive of bees into the hen house so it would be protected from wind and rain. The hive was placed far enough back from the door not to get any rain. The window in the door was out. Last week we found the bees all dead.—A. Klein, N. Y.

Answer.—You really should have left the hive outdoors in some fairly well sheltered spot, during the winter months, instead of moving it into

the hen house. The trouble with such a winter location for bees is that during a warm day the bees will fly out of the hive and out of the building if there is a small opening to the outside, and will fail to get back into the building and into the hive. This frequently happens. In your locality it pays to wrap a hive of bees in building paper during the winter months, leaving an opening in the paper opposite the entrance of the hive.

What Happens to Virgins Born Late in the Fall

Question.—Will young queens hatched out after all drones are killed in the fall mate next spring?—J. B. Waller, Va.

Answer.—We hardly think that a young virgin queen that emerged from a cell late in the fall will remain in the hive during the winter and mate the following spring. If such should happen, it would certainly be the exception rather than the rule.

Vetch as a Honey Plant

Question.—Vetch has been mentioned as a honey producing plant. Which variety makes the clearest honey and is also best from a pasture standpoint? — John C. Wharton, Texas.

Answer.—The honey plant known as vetch grows best on an acid soil. Sweet clover, in fact, all clovers, require an alkaline soil. Vetch is nowhere equal to any of the clovers as a honey plant. However, when weather conditions are right, sometimes quite a crop of honey can be secured from vetch.

Dividing Ten-frame Hives to Make Nuclei Mating Hives

Question.—I propose to take a 10-frame hive, put three divisions in it, and make four two frame nuclei with an entrance for each nucleus on the four different sides of the hive. Now my question is, do you think two frames make a large enough nucleus for holding reserve queens?—D. F. Owen, Calif.

Answer.—Your idea of making a 10-frame hive contain four two-frame nuclei, by putting three tight fitting division boards in the hive giving an entrance on each of the four sides, should work out to advantage. Some have done this. If the nuclei are made up fairly strong, they keep each other warm to a certain extent especially if the division boards are reasonably thin. Some have three three-frame nuclei in a ten-frame hive, using two tight fitting division boards having entrances on three sides.

New Procedure for Securing Sugar for Feeding Bees

We have recently been informed by the Office of Price Administration that effective January 1, 1946, the rationing responsibilities formerly handled by local OPA offices, including the approval of certificates for securing sugar with which to feed bees, have been transferred to District OPA offices. It will therefore be necessary for beekeepers to submit their requests for sugar for bee feeding direct to OPA District offices. There are 66 such offices in the country, including at least one in each state.

A revised application sheet, OPA Form R-356, revised December 1945, has been prepared, and can be secured upon request to your nearest OPA District office, the address of which can be furnished by local OPA offices, many of which are being continued for purposes other than rationing. When applying for sugar for this purpose, allow for more delay than was experienced when local OPA offices were authorized to grant these requests.

The regulations approving the authorization of sugar for feeding bees have been clarified somewhat and are included in the latest OPA revision, headed "3b Rev. RO 3," and Supplement 1 of this order, both issued December 29, 1945, and effective January 1, 1946. The substance of the order has not been changed: "A beekeeper who needs sugar for feeding his bees may get sugar for that purpose in an amount not to exceed 10 pounds per calendar year for each colony of bees. (Each newly-installed package of bees and each queen mating nucleus shall be considered a full colony.)" In addition, "if additional sugar is necessary to prevent the loss of his bees," a beekeeper can obtain a certificate permitting him to obtain not to exceed 15 more pounds of sugar per colony, upon certification by the local AAA Committee representative.

Please see that beekeepers in your area are advised of these changes in OPA regulations and procedure.

Harold J. Clay,
Chief Honey Section,
Special Commodities Branch
U. S. Dept. of Agriculture
Washington. D. C.

Editorials

Lumber for Hives The lumber supply problem has been extremely critical for all supply manufacturers this spring. The situation was brought about by a 3-month strike in the West Coast lumber manufacturing industry and low production since the first of the year due to shortage of labor and lack of equipment at the lumber mills. Also the priorities system went into effect the first of the year to reserve lumber for the veterans' building and has taken much of the lumber normally available for bee hive manufacture.

As the result of a trip to Washington by representatives of the beekeeping industry, the Civilian Production Administration in cooperation with the Department of Agriculture has issued a temporary high priority for lumber for use during March and April to help in the production of bee hives. While this aid comes at a rather late date it should improve the supply picture.

Installing Packages in March Some experimental work is being done by some of the bee culture field stations, of putting packages into hives in the North during March instead of later on in the season.

During a normal season such packages, if installed in hives containing full sheets of foundation, would have to be fed a pollen substitute in addition to sugar syrup until nectar and pollen from natural sources would be available.

Furthermore, the producers of packages and queens might have to use pollen substitutes or supplements for early production unless perchance they would be located far enough south for an ample amount of pollen and nectar to be available.

The early installation of packages in the North should result in colonies in the pink of condition for the major flow from clovers beginning in June.

Apparently a considerable amount of experimental work has to be done along this line to determine the worthwhileness of such early installation of packages. It has seemed to us that putting packages into hives at the time the first early pollen is available, then supplying some combs of pollen saved out for this purpose, to supplement any possible deficiency and giving the packages expert management should result in populous colonies for the major flow.

The Effect of Feeding Sugar Syrup on Brood Diseases The deterrent effects of a heavy honey flow or heavy feeding on brood diseases are factors that have perhaps not been sufficiently measured or evaluated in our discussions of sulfa drugs for the cure of AFB. It is a fact now well authenticated that either of these factors will clean up EFB if the colony is strong. We also have had numerous instances of how a heavy or rapid flow of nectar or a sugar syrup feeding reduces the ravages of even AFB and sometimes cleans up that disease in a colony for the season, and then breaks out with virulence the next season when the stores are short. No one has thought of trying heavy feeding of syrup alone the next year as now recommended in the use of sulfathiazole medicated syrup.

Leroy Baxter, as reported on page 161 of the March Gleanings, now has, by continuous feeding of medicated sulfa syrup, finally cleaned up AFB in his 700 colonies, which he was not able to do by shaking and burning. He also writes that when he had made a real clean up, he had an extra heavy honey season.

It is now claimed that while the sulfa drugs do not destroy the germs of certain diseases in the human family, they inhibit, that is, prevent, the growth of new germs.

While reports of feeding sulfa medicated syrup continue to be favorable, we cannot yet draw final conclusions of its merit until Father Time renders his verdict.

Burning Mandatory in Some States

In most states the foulbrood laws make it mandatory to burn all infected material, including bees. This presents a problem to the bee inspector. If he believes the new treatment is effective, shall he postpone burning and wink at the law, or shall he stick to the letter of the law as written? In favor of a lib-

eral policy, there are many old laws that are out of date and by common consent are not enforced. It is our opinion that at this stage of our knowledge of the effectiveness of the new treatment, most inspectors will order burning..

Some inspectors possibly may feel that the sulfa drugs will put them out of business. Hardly, because if effective, the bees will need close checking to see if there is a recurrence.

It is claimed that those same drugs will cure or abate Nosema which is more serious than is generally believed. Here especially the services of a bee inspector will be needed more than ever.

Sugar for Bees

In the February 1946 issue we carried an item covering "Procedure for Securing Sugar for Bees". It is appearing again in this issue, page 223. Read it carefully.

Beekeepers who are receiving packages from the South and are depending on sugar rather than combs of honey for bee food should make it a point to apply for sugar as soon as possible. It would be unfortunate to receive a shipment of package bees and have nothing to feed them.

The New-old Doctrine of Pollen Substitutes

A. I Root, the founder of this journal, has up until recently been given the credit for being the first to introduce the use of flour in the form of rye meal to supplement or increase brood rearing in the early days. While it is true that Mr. Root was using these substitutes in the early 70's, he was by no means the first to see their possibilities. Turn to the first edition of Langstroth's book published in 1853, and you will find that Langstroth said: "The importance of pollen to the nourishment of the brood has long been known". Then he tells how the bees in the Dzierzon apiary, as early as 1850, before the time when they could procure any pollen from natural sources would bring rye meal to their hives from a neighboring mill. Then, Langstroth adds (in 1853 mind you): "It is now a common practice in Europe".

When it was observed in the late 80's and the early 90's that this rye meal impacted in the cells of honey combs apparently was not utilized by the bees, the conclusion by some of our leading beekeepers was that this artificial pollen substitute for real pollen was of little or no value. Among those who arrived at this conclusion were Parker, Whitcomb, Wilson, Callenbach, and also the writer. For some years no effort was made to increase brood rearing beyond having pollen stored by bees in the combs in the fall or gathered by them in the spring.

It was not until after Dr. C. L. Farrar of the U. S. Bee Culture Laboratory, Madison, Wisconsin, and his associates, and Dr. Mykola Haydak of Minnesota came to the conclusion that the feeding of ground grains, especially soybean flour (propeller processed) could and did greatly increase the amount of brood and bees that some progress was made along this line. While Haydak was working on a **substitute,** such as skim milk, brewer's yeast and the like, Farrar and his associates were recommending a supplement, trapped pollen, 25% pollen and 75% soybean flour, as a product that was equal to the natural pollen gathered by bees.

In the meantime, some difficulties were experienced in an attempt to trap pollen. While some were successful, others were unsuccessful and were inclined to use skim milk or brewer's yeast.

It is now believed, both by Haydak and Farrar, that these substitutes added to soybean flour will not be as effective as trapped pollen added to that same flour. While some could see no value in the use of skim milk or brewer's yeast, others found (during the scarcity of pollen) that these products added to the soybean flour greatly increased the brood. If it was two thirds as effective as trapped pollen, it was a step in advance.

Late word from all over the country seems to indicate that soybean flour alone made up into patties by adding sugar syrup and placed up on top of the frames will alone increase the amount of brood provided there is some pollen in the hive or the fields.

The Central Bee Culture Station of the Soviet Union has been testing out various ground grains and wheat flour in connection with milk or eggs and has found that the combinations will greatly increase the amount of brood in hives.

Hubam Clover Coming Back We have received some favorable reports on crops secured from Hubam in 1945. It is sown in the spring and begins to bloom in late summer and continues until frost.

Being an annual clover the results attained by the beekeeper are realized the same season the seed is sown. Some 25 years ago Professor Hewes, now at the Iowa State College, did considerable work along the line of developing this annual clover which is named after him. Large acreages were developed in the black belt of Alabama. The late A. I. Root was also interested in this clover. After some years Hubam lost some of its original popularity but of late it appears to be gaining popularity once more. Beekeepers should do all possible to encourage farmers to plant Hubam. It is needed by farmers and beekeepers.

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Laws to Prevent the Movement of Bees and Used Equipment across State Lines Whatever may be said about the desirability of such laws, a nuisance to some and a blessing to others, no little trouble and some litigation has occurred. Most states have foulbrood laws of some sort and usually there is a clause or paragraph that specifically prohibits the movement of bees on combs and used bee equipment from one state to another. In favor of such legislation, no beekeeper wants bee disease, especially AFB, brought into his territory. Against the legislation is the fact that it is often a hardship to the incomer to have his bees quarantined on arrival and held there until the state bee inspector can make the necessary inspection to see that they are free from disease with the possibility that the newcomer can be ordered back.

It is only fair to warn beekeepers who propose to move their bees and used equipment into another state that they should first have their bees inspected by the local bee inspector. If found to be free from disease, he should then write to the state bee inspector who is usually located at the state capitol of the state to which he proposes to move. With the exception of a few states, if all conditions are favorable (no bee disease), the bees and equipment can be moved into another state.

Not later than last fall when beekeepers could not get sugar to feed their bees sufficiently to take care of them during winter, some moved their bees and equipment across state lines down South to new pastures with the hope of saving the colonies from actual starvation. Permits were first secured.

Of course, the purpose of laws prohibiting the movement of bees and used equipment across state lines is to prevent the spread of bee disease from one state to another. There is a secondary reason—an extensive beekeeper may have several hundred colonies of bees. He has a good territory and naturally he doesn't want beekeepers from out of the state to come in and divide the profits. He cannot, of course, prevent the movement of other beekeepers within the state. In most cases, there is an unwritten law among neighboring beekeepers of the same state that they shall not put more bees in the locality than it can carry at a profit.

Combless package bees carrying a certificate of inspection, can cross state lines. It is rare that such bees would carry disease, especially if they have gone any distance using up all the honey that was in their honey sacs.

The question has been raised as to whether laws prohibiting the movement of bees and used equipment are constitutional. One has only to refer to the laws preventing the movement of cattle or of nursery stock across state lines without a permit, and naturally enough, what would apply to cattle and nursery stock would also apply to bees and used equipment.

Warning.—If trouble arises from the movement of used equipment across state lines especially if prejudice develops, either move the bees back to the state of origin or settle out of court. When bitterness gets into the fight and the lawyers on both sides pay their respects in no complimentary terms, the jury gets confused and is inclined to assess heavy damages against the outsider. Ignorance of any law is not accepted by the court as a reasonable defense. If one innocently violates a law, plead guilty, and get a minimum of fine or get out.

HOMEMAKING CHATTERBOX

By Mrs. Harriett M. Grace, Director
American Honey Institute, Madison 3, Wisconsin

The flowers that bloom in the spring - tra - la -, bring promise of all the good things associated with warm weather; and with the change of season comes a change in the homemaking problems that arise. There are new varieties of fresh fruits and vegetables to work into your menus, problems of storage of winter things, and a host of others.

Spring and salads go hand in glove with each other with crisp tender greens and succulent fruits coming into the markets. For an easy-to-fix supper or lunch, serve your favorite hot casserole dish with a tossed greens salad. Use tender uncooked spinach leaves torn, not chopped, into small pieces, and fresh endive or chickory. Toss lightly together with a dressing of lemon juice and honey in equal portions to which a dash of Worcestershire sauce has been added.

Another salad surprise to add a refreshing note to spring meals is coleslaw with shredded raw carrots and orange segments mixed with a dressing of one part boiled dressing, one part honey, and one part vinegar or lemon juice.

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The outlook for a new supply of household linens and cotton goods is still pretty grim, so it will behoove wise homemakers to continue to take good care of those she has. If you vary the fold of your sheets, pillow slips, and table linens, it will lessen their tendency to "crack" along the folds. Another tip for their preservation is to rotate the wear by always storing the freshly laundered ones on the bottom of the pile, so that each does its share. The farmer keeps his soil from wearing out by using this principle, and it will work for you, too.

The omnipresent question of how-to-out-smart the moths and keep winter woolens intact during the warm weather storage period is pertinent again. Here is a simple, yet effective way to keep the intruders away from small garments like sweaters, scarves, fascinators, etc. Just roll up each garment separately and put into a one or two quart Mason jar. Many girls keep theirs this way all year around, being able to tell at a glance which one is which. They make an attractive display when set in a row on the closet shelf, especially if the jar covers are painted to match the decor of the room.

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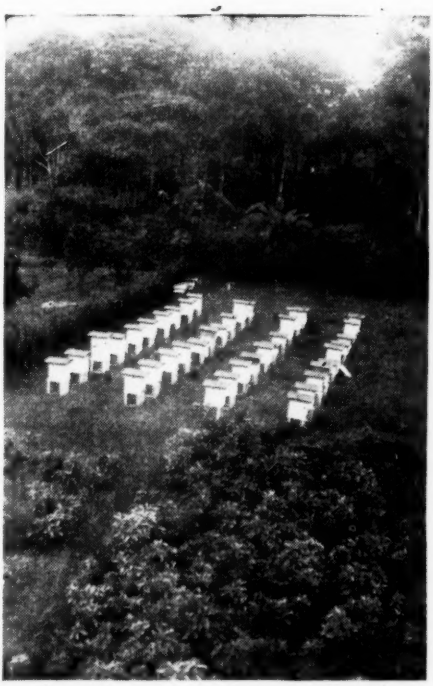
Nowadays we still find grocers giving us our eggs in a paper sack instead of in cardboard boxes. This means the rate of injury goes 'way up. If you discover an egg which is broken at one end, crack the opposite end and the contents will not come out.



The apiary of the Department of Apiculture at San Pedro de Montes de Oca, Costa Rica.—Photo sent in by Orlando Munoz B.

Just News

The annual meeting of the Ohio Apiaries Cooperative Association was held at the packing house in Gillivan, Ohio, on February 21. A good report was given by the manager, Lloyd Gardner. The Cooperative is putting on the market a fine product in a very attractive package and rendering the beekeepers a real service. During the evening a number of persons spoke, including Dean Cunningham of Ohio State University, and B. P. Sandles, Assistant Director of Agriculture. Professor D. R. Dodd of the Agronomy Department, O. S. U., gave an illustrated talk on Pasture Improvement in Ohio. This is of real interest to Ohio beekeepers as it means more and better bee pastures.

The New Rochelle, (N. Y.) Beekeepers' Association will hold its next monthly meeting on Sunday, April 21, 1946, at 2:30 P. M. The main topic to be discussed will be "Inspection of Bee Hives for Spring", and after the meeting a social hour will follow. The secretary will notify the members of the place of meeting.—B. F. Miller

A four weeks **Short Course in beekeeping** for veterans will be given at Rutgers University, starting April 29th and closing May 25th. Preference will be given to veterans from New Jersey. The course will run Monday through Friday of each week and emphasis will be placed on actual field experience with bees in the College apiary. Any veterans interested should write Prof. F. G. Helyar of Rutgers University.—Robert S. Filmer, Asst. Prof. of Entomology

Michigan State Meeting - March 5, 1946. Despite sleety, rainy weather and slippery roads, the attendance was beyond all expectations. This meeting may have been the best attended winter meeting in Michigan in years. A number of university experts were present who gave freely of their store of knowledge.

Dr. Bell pointed out that we cannot assume that all the legumes are completely self-sterile. Alfalfa, for example, is not completely self-sterile. Red clover and alsike are generally self-sterile. White clover is not quite so self-sterile. Neither the white nor yellow varieties of sweet clover are completely self-sterile.

Dr. Farrar demonstrated the making of pollen cakes for bringing colonies up to full strength in the spring. He said that without some natural pollen, the substitutes lack vitamins or hormones. If natural pollen, trapped, dried, heated, and stored in sealed cans from the year before is added to the expeller processed soybean flour, the effectiveness of the substitute is very greatly increased. Six pounds of pollen will make 48 one-and-one-half-pound cakes for feeding, and one cake of this material results in an added pound of bees. Dr. Farrar sees little benefit in powdered skim or brewer's yeast. The expeller processed soybean flour is better than that from which the natural oil has been extracted by chemicals.

Full details of Dr. Farrar's plan of feeding pollen and pollen supplements are given in U. S. Bulletin E531.

The Bronx County Beekeepers Association will hold its next regular monthly meeting at the home of W. L. Jones, 1727 Undercliff Ave., Bronx, N.Y., Sunday, April 14, at 2:30 P. M. sharp. Nomination of candidates for office, and a change in our monthly meetings will be voted on. Refreshments will be served.—Sam Roberts, Sec.

A 1000 mile tour of the local associations in the state of Washington has just been completed by Geo. N. Paige, chief bee inspector, and H. S. Records, president of the state association.

Local association meetings were held at Spokane, Clarkston, Walla Walla, Clark County, and Puyallup. Methods were discussed for improved service of the local organizations. The fundamentals in organization work were explained and their relation to the state and national federation. Emphasis was placed upon the inter-relation of beekeepers' organizations with allied agricultural organizations, particularly with those groups in horticulture, legume seed, and vegeta-

ble seed growers. Also shown was the need of support for the American Honey Institute in promoting information as to the usefulness of honey.

Mr. Paige outlined the season's work for control of AFB. The use of sulphathiazole in quarantine yards is being conducted on a larger scale than in any place in the United States. This year much educational work will be done by the inspection staff.—H. S. Records, Pres.

The Walter T. Kelley Co., Paducah, Kentucky, has taken over "The Beekeepers Item. Our best wish for the continued success of the Item.

The Northwest District Beekeepers' Association will meet at Marysville, Wash., April 7. **The Pierce County Beekeepers' Association** will meet May 5 at Puyallup, Wash.—H. S. Records.

A new miracle drug, **Streptomycin**, has been discovered which alone or in combination with the other two miracle drugs, promises to cure many, if not all, of the diseases that affect the human family, especially those found in the intestinal tracts. For particulars on how this lends new hope to the medical fraternity in the conquering of disease, see the November, 1945, issue of Readers' Digest, pages 37-40. It is perhaps not too much to hope that one of these miracle drugs will simplify our treatment for the cure of brood diseases and also to control Nosema for which there seems to be no definite cure.

"Make Good Things with Honey" is the title of a booklet sent out by the Home Economics Department of the Kellogg Company, Battle Creek, Michigan. This organization, our readers of course know, has been very friendly to honey and has said many nice things about the product and how it may be used in home cooking. The head of the Economic Department is Mary I. Barber, and if there is anyone in the whole United States who knows how to make good things to eat out of honey, she is that person. The Kellogg Company will send out this little recipe booklet to anyone who writes to the Home Economics Department, Kellogg Company, Battle Creek, Mich.

Shipments of Package Bees in 1945

A total of 1,227,000 pounds of package bees were shipped in 1945, according to the Bureau of Agricultural Economics. This total is 7 per cent larger than in 1944. Shippers expect to ship about 1,297,000 pounds in 1946—6 percent more bees than in 1945. With only a 6 percent increase in shipments of package bees, an increase of 9 percent in colonies secured by division would be necessary in order to reach the 1946 goal of an 8 percent increase in total colonies unless there is a shift toward smaller size packages which seems unlikely. In early January shippers had orders on hand for 63 percent of their 1946 expected production, compared with 79 percent a year earlier.

Of the total pounds of bees shipped in 1945, about 40 percent moved in 2-pound packages, 54 percent in 3-pound, 4 percent in 4-pound, and 1 percent in 5-pound packages. Bees shipped in units other than those mentioned above accounted for about 1 percent of total shipments.

In 1945, Georgia led all other States in the shipment of package bees, with Alabama, California, Louisiana, Mississippi, and Texas ranking in the order named.

Shippers of package bees held about 233,100 colonies of bees in the spring of 1945. From these colonies an average of 5.3 pounds of bees per colony were shipped last year, about the same as in 1944. Package bees shipped per colony ranged from an average of 3.0 pounds in Texas to 8.5 pounds in Georgia.. The low averages per colony in Texas and California are due to the practice of making a light shaking of bees for packages, and leaving the colonies in shape to build up and produce a honey crop later in the season.

The number of queens shipped by package bee shippers in 1945 was 874,600, compared with 815,000 in 1944—an increase of 7 percent. Alabama led all States in the shipment of queens. The number of queens shipped by package bee shippers in 1945 exceeded the number of packages shipped by 80 percent.—U. S. Dept. of Agri., Bureau of Economics, Washington, D. C.,March 1, 1946.

Talks to Beekeepers

M. J. Deyell

Bees Carrying Pollen on March 5. This is March 6, and the weather is quite mild. Yesterday I examined the entrances of two colonies near the Gleanings office and to my amazement saw bees carrying in pollen.

Last spring I saw the first pollen on March 15, which was unusually early for this locality. As a rule freshly gathered pollen is not seen in this locality until the last few days of March or the first week of April. The bees collect some of the first pollen from the pussywillow. I don't like to see the bees collecting pollen so early in the season. Last year it resulted in an abnormally early development of colonies, which in the end was not favorable for bees. The warm spell was followed by a long cold spell, unfavorable for flight and which set the bees back. Heavy frosts following a warm spell may freeze buds and destroy sources of pollen.

We are hoping we may have some cool weather instead of a prolonged warm spell so early in the season. Bees in cellars in the North will get uneasy if warm weather prevails during March.

We Examined Some Colonies. On March 4, a rather warm day, E. R. Root wanted to take some pictures so we went out to the home yard where the bees were flying quite freely. Apparently the colonies have wintered well. We examined the brood chambers of a few colonies and found small patches of brood in only two combs. There were some eggs, larvae, and sealed brood. Some young bees had already emerged. This is what we would expect to find here at this season of the year. In southern Ohio there would probably be brood in three or four combs and in southern states brood in seven or eight combs.

We Fed Soybean Flour. In last month's Talk I mentioned our plan to feed soybean flour mixed with sugar syrup. We did this February 28. Sixty cakes or patties about one pound each were made up and carried to two outyards. As the hives in these yards were not packed, being in well protected spots, it was an easy matter to remove the hive covers and lay a cake of food directly over the top bars, near the center of the hive. A piece of waxed paper was placed over each cake and the inner cover was turned upside down to make space for the cake of food that was flattened out to about one half inch in thickness. (In this connection it is an advantage to feed patties on a cool day when the bees are clustered and not scattered on top of the frames. Too many bees are likely to be crushed if the bees are on top of the frames.) The outer cover was placed on and the feeding was finished. We have not returned to the yards to see how the bees have taken to the soybean flour mixed with syrup but I suspect that they are taking it down fairly well, since the weather has been mild.

We intend to repeat this feeding every ten days until an abundance of pollen is available from natural sources. Perhaps that time may come sooner than we think, or, if cold weather sets in, it may come later on in the season.

In feeding the two yards, which contain about 60 colonies each, we fed every other colony, leaving one half of the hives to serve as check colonies. We have a record card under each outer cover to tabulate the amount of pollen substitute fed, the dates, etc.

The two yards used for this experiment are what we call shaking yards. We fill package bee orders from Medina during June and July. It is possible we may be able to shake the yards earlier this year if the stimulation given the colonies by feeding pollen substitutes results in earlier brood rearing.

We have some honey producing yards around Medina. We hope, in

a few days, to feed one half the colonies in an apiary of almost 70 colonies. We will find out how much more honey the colonies being fed pollen supplement, will store than the colonies not fed pollen supplement.

Also, we are keeping tab on the amount of labor, material, also truck mileage, involved in this experiment. After all, if the results obtained, either in extra packages of bees or extra surplus of honey, do not warrant the extra expense involved in feeding these colonies, this extra expense will not be justified. I suspect that the cost of feeding is more than we might think. Time will tell.

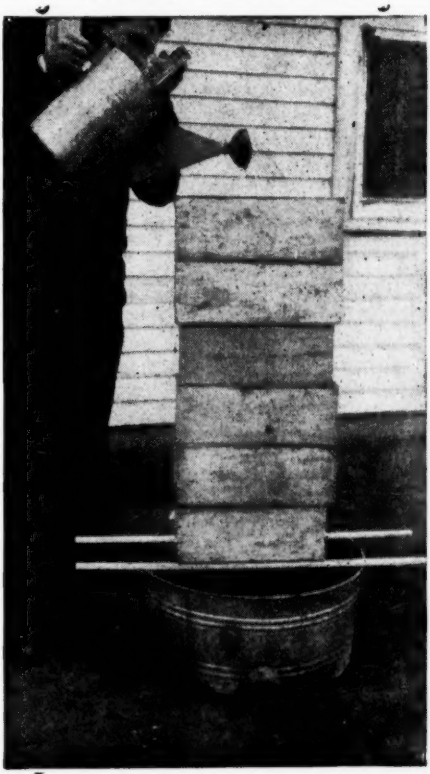
Colonies Fed Will Consume a Considerable Amount of Stores. This feeding of pollen substitutes will naturally encourage brood rearing which in turn will result in bees using a considerable amount of stores. Obviously, all the colonies should be well supplied with an abundance of stores. If the extra stores used are waranted, from the standpoint of extra surplus honey, or packages of bees secured, all well and good. C. L. Farrar, who has done a considerable amount of experimental work along this line, says that honey left on the hives for bee food is worth more than the same honey removed as surplus and sold, or words to that effect.

All this talk about pollen substitutes and supplements may be somewhat confusing to the beginner. As a matter of fact, each beginner will have to learn, mainly from experience, just how and when to feed supplements or substitutes. In some localities, where there is an abundance of natural pollen it may be unnecessary to consider such feeding.

How to Examine Colonies. The beginner wants to know how and when to open hives to examine brood chambers, what to look for and what to do in order to bring all colonies up to par in strength, so far as this is possible. Hives should be opened during the warmest part of the day while the bees are flying well. One needs a bee smoker, a bee veil, and a hive tool. The smoker should be well lighted before putting on the veil, especially if it is a cotton veil which is easily burned by the flames from a lighted smoker.

Never stand directly in front of a hive when bees are flying. If the hive has an outer cover, remove it, then insert the hive tool under one corner of the inner cover and blow some smoke through the small opening. Wait a few seconds, remove the inner cover, then apply some more smoke over the tops of the frames, but not too much. To remove the first frame, shove the hive tool down between the end bar of the nearest frame and the hive wall, then pry the frames over toward the opposite side. Next, separate the nearest frame from the adjacent one and remove it carefully. Do not make any quick moves. After examining the comb, stand it on one end at the front corner of the hive so as to not obstruct the hive entrance. This is important, because if the queen should be on this comb she can easily crawl into the hive instead of being lost in the grass, as might happen if the comb should be placed back of the hive.

(Continued on page 249)



Warm sugar syrup, one part water to one part sugar is poured out of a sprinkler can, through the cages.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 10 cts. per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fairfield Honey Company, Millersport, Ohio.

WANTED—All types clover and fall honey, 1945 crop. Cloverdale Apiaries, Fredonia, N. Y.

WANTED—White and amber honey, any amount. D. F. Treap, 316 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—EXTRACTED HONEY—Clover or light amber. C. H. Denny, 483 Moody St., Akron, Ohio.

HONEY & BEESWAX—Highest prices paid. Mail samples. Advise quantity. BRYANT & COOKINHAM, LOS ANGELES, CALIF.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample. 60-lb. cans furnished, if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades. Carloads or less. Also Beeswax. Pay Top Prices. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York, 7, N. Y.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles, Calif.

ALL GRADES OF HONEY needed badly. Our truck will pick up at your door and pay top cash prices. ALEXANDER CO., 319 Reynolds, Toledo, Ohio.

WANTED—At highest ceiling prices—1,000,000 lbs. of amber honey; 1,000,000 lbs. of light; 10,000 cases 24-16 at $5.04. Cash paid, no amount too small. We pay the freight. Honeymoon Products Co., 39 E. Henry St., River Rouge, 18, Mich.

HONEY WANTED. Highest prices paid. We replace your tins with new cans. Write to R. P. O'Donnell & Co., 4840 Drexel Blvd., Chicago 15, Illinois.

WANTED CLOVER HONEY, any amount, comb or strained package or unpackaged. Will pay top cash price. Lose Bros., 206 E. Jefferson St., Louisville 2, Ky.

WANTED light extracted honey, clover preferred, in 60's. J. Jones, 115 West 82nd St., New York 24, N. Y.

WANTED—Honey, extracted or comb. Mail sample, quote price. SEIFERT & MANN, 106 South Water Market, Chicago, since 1887.

HONEY FOR SALE

HONEY FOR SALE in drums or 60's. Alexander Co., 819 Reynolds Road, Toledo, Ohio.

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Mich.

FOR SALE

QUEENBEE PAINTING OUTFITS, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Mass.

BEEKEEPER'S HOIST — $25.00 f.o.b. Frt. prepaid in U.S.A. on two hoists to same address. Turner Mfg. Co., Corning, Iowa.

INSTANT SEVEN AND NINE FRAME SPACERS. Fast — accurate — indispensable. Fat combs — easy uncapping. Set does all supers, $1.50 postpaid. SPECIFY SIZE. George Leys, 48 Drake Ave., New Rochelle, New York.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

WRITE FOR CATALOG. Quality Bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

200 colonies , deep shallow and comb supers. All or part. 1½ ton truck. Wm. March, R. D. 3, Mantua, Ohio.

WRITE FOR LOW CASH price glass jars and 5-lb. tin pails. Complete stock. Prompt shipment. Roscoe F. Wixson, Dundee, N.Y.

Try feeding ANDERPOLL, the Bee-pollen substitute, to strong colonies during and before the swarming period and thus possibly lessen or prevent swarming. Bruce Anderson, Cedar Grove, N. C.

WOODMAN 30 - frame extractor with capping baskets, 1 horse motor, if desired, used one season. Need larger one. Also two 55-gallon steel drums with 1½-inch gate bottom outlet. $13.00 for both. W. H. Bower, 232 Oakwood, Jackson, Mich.

FOR SALE—25 colonies of bees, one or all. Certificate of inspection furnished. F. C. Wiles, 228 Prospect St., Wellington, Ohio.

FOR SALE—Three thousand used Root Hoffman frames, good condition, $3.00 per 100. J. W. Grady, Chafee, N. Y.

PURE BEESWAX, crimp wired foundation, 8½ x 16¾, 25 lbs., $22.50. Floyd Blackman, Rockdale, N. Y.

FOR SALE—100 metal top, 10-frame covers. Howard Grimble, Holcomb, N. Y.

ROOT 10 inch foundation mill, like new (in original case, or box). Gerhart Trachte, Watertown, Wisconsin.

60-lb. used cans, 2 cans to wooden crate, 50c. Joseph Fekel, Vineland, N. J.

FOR SALE—Due to ill health, 50 comb honey supers, complete, for 1½x4¼x4-1/4 sections, $25.00; 50 empty standard hive bodies, 10-frame, $50.00· 100 standard bodies with 9 drawn combs each, $250.00. All factory made and well painted. Guaranteed no disease. Wm. H. Keyser, R.D. 3, Schenectady, N. Y.

300 10-frame hive bodies with combs, shallow, standard, and Jumbo; 165 empty bodies without combs; 500 new shallow frames; 45-frame extractor; tanks; cans, and all other supplies for the apiary. Send for list. Wm. F. Vollmer, Akron, N. Y.

WE CARRY a complete stock of bee supplies and honey containers. Write for our price list. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

THREE-GALLON copper tank with 10-inch steam uncapping knife and two 5 foot rubber hoses, good as new, $7.00. Peter Knudsen, Lorida, Florida.

FOR SALE—Part or all of 50 colonies, two stories, ten frames, wired, two years old. Certificate of inspection furnished. $10.00 each. Prof. Jess Kovanda, Ord, Neb.

HONEY LABELS—Write for our catalog showing 30 attractive designs. There are certain labels planned to fit all sizes of jars. Now is the time to order at least part of your season's needs before the rush starts. The A. I. Root Co., Medina, O.

BEES AND QUEENS FOR SALE

GLEANINGS cannot guarantee that all bees advertised for sale in our classified columns are free from disease. We use all possible care in accepting advertisements but we cannot be held responsible in case disease appears among bees sold. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

PACKAGE BEES, Italians, 3 lbs, with loose mother queen, $4.50 per package. Jno. W. Elliott, R.F.D. 2, Shelby, N. C.

GOOD ITALIAN QUEENS, $1.00 each. D. W. HOWELL, SHELLMAN, GEORGIA.

PACKAGE BEES with young laying Caucasian queen; 2 lb. package with queen, $3.80; 3 lb. package with queen, $4.80. Miller & Evans, Three Rivers, Texas, Rt. 1.

ITALIAN queens selected for winter hardiness, production, non-swarming, and bred for resistance to A.F.B. Ready June 15, $1.25. R. E. Newell & Son, Holliston, Mass. Air mail extra.

CAUCASIAN PACKAGE BEES for April and May. 2 lb. pkg., $4.00; 3 lb. pkg., $5.00 Prompt shipment. Lewis & Tillery Bee Co., Greenville, Ala.

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

WANTED.-Extracted Honey All Kinds

One can or a carload—what have you? Mail your offerings and samples to us. Prompt action—Cash on delivery.

JEWETT & SHERMAN COMPANY

Lisbon Rd. & Evins Ave., Cleveland 4, O.
1204 W. 12th St., Kansas City 7, Mo.

MICHIGAN CLOVER HONEY WANTED!

Buyer of MICHIGAN'S fine Clover Honey

Michigan producers write me when you have some of this fine Michigan Clover honey ready for market.

Can use your entire crop. Don't forget, and write.

TOWNSEND SALES COMPANY

E. D. TOWNSEND
NORTHSTAR, MICHIGAN

Honey and Beeswax Wanted

We are ALWAYS in the market, paying best market prices.

Send for our 1946 price list on bee supplies.

Doing business since 1858.

The Fred W. Muth Co.

229 Walnut St., Cincinnati 2, Ohio

Italian Bees and Queens!

We are booking orders for Spring, 1946 Only 20% with order, balance ten (10) days before shipping date. Prices as follows:

2-lb. package with queen	$3.50
3-lb. package with queen	4.50
4-lb. package with queen	5.50

The Star Bee Farm

HESSMER, LA.

Booking Orders for 1946 for Our Bright Three-banded Italian Queens and Package Bees.

PRICES:	Queens	Packages and Queens 2 lbs.	3 lbs.	4 lbs.	5 lbs.
1-4	$1.25	$4.00	$5.10	$6.20	$7.30
25-99	1.15	3.75	4.80	5.85	6.90
100-up	1.05	3.50	4.50	5.50	6.50

We ask 10% deposit with orders booked in advance. We guarantee safe arrival and satisfaction.

TAYLOR APIARIES
Box 249, Luverne, Alabama

PACKAGE BEES

Hardy leather colored Italians.
Fast conscientious service.
2-lb. with queen, $4.00
3-lb. with queen, $5.00
25c per package extra for small orders.
BOOK NOW FOR '46!

EUGENE WALKER
397 Oregon St. Gridley, Calif.

HOLLOPETER'S ITALIAN QUEENS

Beginnng around May 15th this strain of Northern-bred queens will be ready. Untested, $1.25 each. In June, $1.00.

WHITE PINE BEE FARMS
ROCKTON, PA.
(The Home of Good Italian Queens)
Gleanings advertisers since 1911

Ray's Apiaries

Lynn Williams
QUEENS AND PACKAGE BEES FOR SALE
Route 3, Box 152
OROVILLE, CALIFORNIA

QUEENS

BRIGHT THREE BANDED ITALIANS

Select young laying queens bred from colonies carefully checked for prolificness, comb building, honey gathering, hardiness, and gentleness.
Health certificate with each shipment.
Service and quality guaranteed.
1-24, $1.25 each; 25-99, $1.15 each; 100-up, $1.05 each.

ALLEN APIARIES

610 Cherokee St., Mobile, Alabama.

FOR SALE—Package bees with select young Italian queens: 2 lbs., $4.00 each; 3 lbs., $5.00 each, orders of 50 or more. Thos. C. Burleson, Colusa, Calif.

GREEN'S profit-producing queens will please you as they have pleased hundreds of others. Famous the country over. Where could you do better? Price, $1.00 each. D. P. Green, Rt. 2, Deland, Florida.

FOR SALE—15 hives of Italian bees, reasonable. Certificate of inspection furnished. Allen Smith, Leighton, Pa., Route 209, near Forest Inn.

100 COLONIES. Certificate of inspection furnished. Supers, tank, extractor, cans, power saw, lumber. Frank Noel, Rt. 2, Stroudsburg, Pa.

FOR SALE—Bright Italian queens. Graydon Bros., Greenville, Rt. 2, Ala.

FOR SALE—Standard three-pound packages certified Italians, $4.40 net F.O.B. after May 15th. A. V. Dowling, Valdosta, Ga.

300 SNOW WHITE HIVES bees, June 1st. New combs, young queens. Ideal for migratory shippers. Certificate of inspection furnished. B. M. Crawford, 305 No. McClay St., Santa Ana, Calif.

ITALIAN bees and queens for sale. Queens, $1.25 each. Three pound package bees with queen, $5.00. John M. Brose, Capitola, Calif.

FOR SALE—Nine colonies in Root three story hives. Certificate of inspection furnished. John Sugaski, 333 Eastern Heights Blvd., Elyria, Ohio.

LOTS OF ITALIAN BEE PACKAGES (boosters) for last of May and June delivery from Nashville. N. S. Gladish, 3315 Hobbs Rd., Nashville, Tenn.

BREWER'S LINE-BRED CAUCASIAN QUEENS—Breeding stock selected from 1000 field tested colonies for honey production and gentleness. Open dates from June 15th. $1.00 each, AIRMAIL postpaid. Brewer Brothers Apiaries, 3217 Hawthorne Road, Tampa 6, Florida.

ITALIAN QUEENS, $1.00 air mail service from Albany. Pinkie & Buck Apiaries, Box 383, Albany, Georgia.

FOR SALE—115 colonies bees and complete apiary equipment, tanks, extractor, supers, hive bodies, etc. Certificate of inspection furnished. Write Spring Valley Apiaries, Box 145, Rockville, Indiana.

MISCELLANEOUS WANTED

WANTED—Novice extractor with power attachment. Ralph Watson, Crivitz, Wisc.

WANTED—Dovetailed deep and shallow supers, nearby, free from disease. L. F. Howden, Fillmore, N. Y.

WANTED TO BUY—Steam boiler, also colonies of bees or deep supers with drawn combs. Hammes & Larson, Madison, Minnesota.

WANTED—Inch pump, redction geared. Fred Boerner, Mount Carroll, Ills.

WANT TO BUY one 8 or 10 frame extractor (preferably 10 and new) with power drive and motor. Thyge Schmidt, Dayton, Wash.

BEES WANTED

WANTED—100 colonies bees and equipment. Knierim, 701 Sheridan Ave., Columbus, Ohio.

WANTED—Colonies of bees in Michigan. Frank D. Chamberlain, Caro, Mich.

WANTED—25 to 200 full strength colonies located within 300 miles of Rochester, N. Y. Write Norman C. Sharp, Fishers, N. Y.

WANTED—50 to 100 hives of bees with locations near Elmira, N. Y. State price. Box 46, Gleanings, Medina, Ohio.

WANTED to exchange ANDERPOLL, the bee-pollen substitute, for a few packages of bees. Bruce Anderson, Cedar Grove, N. C.

WANTED—50 to 75 colonies about May 1st. 10 lbs. purple loosestrife seed for sale. Fred Russell, Chelmsford, Mass.

SEEDS

SEND POSTAL for complete story about the bluevine honey plant. Produces the finest flavored honey known. Always brings a premium in any market. Tritox Chemical Company, Washington, Indiana.

SUPPLIES

ATTENTION BEEKEEPERS IN MINNESOTA, Wis., Iowa, N. D., and S. D. Buy Lewis-Dadant Bee Supplies and Honey Containers in Minneapolis and save. Send for price lists. **TOP PRICES PAID FOR HONEY AND BEESWAX IN CASH OR TRADE. HONEY SALES COMPANY,** 1806-08 No. Washington Ave., Minneapolis 11, Minnesota.

FEED POLLEN SUBSTITUTES THIS YEAR. Dried Brewers Yeast, 30c per lb., Soybean Flour, 15c per lb., 100 lbs., $7.95, f. o. b. Minneapolis. **HONEY SALES COMPANY,** 1806-08 No. Washington Ave., Minneapolis 11, Minnesota.

MISCELLANEOUS

EARTHWORM CULTURE — Send postcard for valuable FREE bulletin, with review on "Intensive Propagation and Use of Earthworms in Soil Building". Thos. J. Barrett, Earthmaster Farms, Box 488-G, Roscoe, Calif.

ATTENTION—If you keep bees where ragweed asthma wont trouble my wife and son, and want an intelligent amateur beekeeper to learn your business, please write. Personal history, health good. Neither smoke nor drink. State possibilities, wages available. Edwin Warner, R. D. 7, Fort Wayne, Indiana.

INSECTICIDES

PARADICHLOROBENZINE (PDB) MOTH CRYSTALS. For gassing wax moth. Nonpoisonous, non-inflammable. One ounce treats 10 brood combs. Give safe protection for months. Two pounds parcel post, $1.00. TRITOX CHEMICAL CO., WASHINGTON, INDIANA.

HELP WANTED

WANTED — Experienced helpers for queen yards, package bee yards and general bee work. Only honest, reliable men considered, no boozers. Give full information, age, experience, reference, and salary expected in first letter. YORK BEE COMPANY, JESUP, GEORGIA.

HELP WANTED—Three helpers in Florida in April. Rest of season in North except one. State qualifications and wages wanted first letter, or see me. Paul D. Thompson, Box 222, Edgewater, Florida.

CARNIOLANS
CAUCASIANS

Sorry, cannot accept any more orders for package bees or colonies. Untested queens, both races, June 1st on.

Price, $1.00 each.

Albert G. Hann, Glen Gardner, N. J.

3-Banded Italian Bees and Queens

We are booking for May delivery

	2 lbs.	3 lbs.
1 - 24	$4.00	$5.00
25 - 99	3.75	4.75
100 and over	3.50	4.50
Queens	1.10	

J. P. CORONA, Kenner, La.

Italian Bees and Queens!

2-lb. package with queen, $3.50
3-lb. package with queen, 4.50
4-lb. package with queen, 5.50

Health certificate, and safe arrival guaranteed, 20% deposit on booking orders.

CLOVER BEE FARMS
Hessmer, La.

Three Banded Italians

PRICES FOR 1946

2-lb. with queen.....$3.65
3-lb. with queen.....4.65
Queens.....1.00
$1.00 deposit required on packages

A. M. Peach
BALDWYN, MISS.

"HONEY GIRL" ITALIAN PACKAGE BEES

Package	1 to 4	5 or more
2 lb. bees with queen	$4.25 ea.	$4.00 ea.
3 lb. bees with queen	5.25 ea.	5.00 ea.

ST. ROMAIN'S "HONEY GIRL" APIARIES
Moreauville, La.

Everybody's Talking About
The Beekeepers' Magazine
It's Spicy Up-to-Date Practical
$1.50 a year 3 yrs. for $3.00
Rt. 5, Box 181, Lansing, Mich.

Italian Bees and Queens for 1946!

Lots	Queens	2 lbs.	3 lbs.	4 lbs.
1-5	$1.25	$4.00	$5.00	6.00
6-24	1.20	3.85	4.75	5.85
25 up	1.10	3.75	4.50	5.75

TERMS: 20% per cent deposit balance at shipping date.

For a bigger and better season get our line-bred Italians noted for their hardiness, vigorousness, and prolificness.

B. J. Bordelon Apiaries
MOREAUVILLE, LA.

TIN CONTAINERS FOR HONEY

A revised printing of the Government C. P. A. Order M-81 covering tin containers has caused some misunderstanding as to whether cans of a size larger than 2½ lbs. could be employed in the packing of honey. A casual reading of the Order might indicate that only 2½ lb. cans can be used, but the introduction of Schedule 1 of the Order shows that where a smaller size is used any larger size container is also allowed. Thus, the five and ten pound pails and 60 lb. cans are permissible as well as the 2½ lb. cans for packing honey.

Root Quality Bee Supplies For Sale
Send your order to
W. H. Starrett
121 N. Alabama Street
Indianapolis 4, Indiana

Gentle Northern Queens

FROM PROLIFIC 3-BANDED ITALIAN BREEDING STOCK

All queens reared under natural conditions in large over-wintered queen-right colonies under supersedure impulse, this being nature's way of producing large, yellow queens that are fully developed.

Some of this stock was recently shipped by air to China, and were successfully introduced.

All shipments will go by air mail starting June 1st, $1.10 each. Please let me book a trial order for 1946, and show you some young northern queens of quality, prompt service, satisfaction.

Barger Apiaries
CAREY, OHIO

WANTED—Intelligent boy or young man of good morals to help operate apiary and seed farm. Modern machinery. Board, room, washing, furnished. Catholic preferred. State experience, if any, first letter and wages expected. George Wendling, North Branch, Mich.

YOUNG MEN with some experience. Write, stating age, wages expected, etc. Soder Apiaries, Stratford, Iowa.

HELP WANTED — Married or single man, to work in 600 colony outfit. Opportunity for right man to purchase outfit in fall. State wages wanted, with board furnished, Archie Kauffman, Rt. 3, St. Johns, Mich.

WANTED, an experienced beekeeper and a helper; steady all year work, good wages, good hours. Victor Abrams, Cornwall, Ont., Can.

SEEDS

BY EXPRESS COLLECT—Transplanted American Basswood trees, 4-5 ft., $1.00; 5-6 ft., $1.75· 6-8 ft., $2.25; 8-10 ft., $3.00 Earlier blooming European Basswood trees 4-5 ft., $2.00; 3-4 ft., $1.50. French Pussy Willow (early pollen producers) 3-4 ft., 60c ; 4-5 ft., 90c each. Red Barked Dogwood and Pink Tartarian Honeysuckle shrubs, 12-18 inch, $8.50 per 50. Write for our NECTAR and POLLEN producing shrub and tree postpaid $1.20 collections, and circulars. NICOLLET COUNTY NURSERY, St. Peter, Minnesota.

MAGAZINES

DO YOU FIND IT DIFFICULT to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription, $1.50. Hotel Cactus, San Angelo, Texas.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s, 6d., International Money Order. Apply Editor. Indian Bee Journal, Ramgarh, Dist., Nain Tal, U. P., India.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association. One year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $2.25. Wallingford Building, Winnipeg, Canada.

Read the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, 14 Riebeck St., Worcester, C. P., South Africa.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existance. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including a subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxston, Royston, Herts, England.

TOO LATE TO CLASSIFY

200 8-FRAME, ONE STORY colonies of bees, with young queens, for sale about May 15th. Inspection certificate furnished. A. W. Bulay, Dayton, Texas.

FOR SALE: 180 colonies bees. Certificate of inspection furnished. Mrs. Wm. Dawson, 209 Witherell St., St. Clair, Mich.

QUEENS

WHY NOT GET A FULL CROP OF HONEY?

Requeen with Dexter's Queens

3-BANDED ITALIANS

Get your queens from improved parentage, produced under superior conditions, and from stock which is checked for honey getting performance. All our breeders are northern producers.

$1.00 EACH, Any Number

Quick Delivery

DEXTER BROTHERS

Myrtle Beach, S. C.

April and May

Italian Queens

Shipment April 1st to 15th,
May 10th to June 1st.

$1.25 each; 25 or more, $1.10.

Rapides Apiaries

Winnfield, Louisiana

Booked For April

and the first ten days of May. We can still take your order for delivery after that date with our light (easy to work with) three-banded Italian bees and queens, second to none when there is work to be done. Service, freedom from disease, and live delivery guaranteed. No C.O.D.

With queen	2 lb.	With queen	3 lb.
1 to 24	$4.00	1 to 24	$4.80
25 to 49	3.75	25 to 49	4.60
50-up	3.50	50-up	4.40

Queens selected untested after May 20th, $1.00.

T. A. Plauche

Hamburg, Louisana

Three Banded Italian Bees and Queens

PRICES UNTIL MAY 20th

Quantity	Queens	2 lbs.	3 lbs. With Queen	4 lbs.
1-24	$1.25	$4.00	$5.10	$6.20
25-99	1.15	3.75	4.80	5.85
100-up	1.00	3.50	4.50	5.50

For queenless packages, subtract price of queen.

We ship only overweight packages of young bees, and young queens guaranteed to be purely mated

Direct all mail to us at LEROY, ALA., and telegrams to us at JACKSON, ALA.

Holder Apiaries, Leroy, Alabama

(In the mild climate of the deep South)

Root QUALITY BEE SUPPLIES

FOR MICHIGAN

Root QUALITY BEE SUPPLIES

We have a good stock of Frames, Sections, Super and Comb Foundation. Sold out till midsummer on five-pack covers, bottoms, hive bodies and shallow supers.

WRITE FOR CONTAINER PRICE LIST AND OUR LIST OF SPECIAL ITEMS, INCLUDING CUTCOMB SUPPLIES.

Beeswax wanted—Cash price, 41½c lb. .Trade price, 43½c lb.
Freight paid on 100 lbs. or more.

M. J. BECK COMPANY

Successor to M. H. Hunt and Son
510 N. CEDAR ST. Box 7 LANCING 1, MICH

GARON'S PACKAGE BEES AND QUEENS

SEND US YOUR ORDER PROMPTLY FOR PACKAGE BEES FOR SHIPMENT AFTER MAY 25th.

Progeny-Test 3-Banded Italian Strain. Also, Charles Mraz's and other Reliable Breeders' Strains of High Quality Daughters of Stock Bred for Resistance.

Quantity	2-lb. pkg. w/q	3-lb. pkg. w/q	Queens
1-9	$3.70	$4.70	$1.10
10-24	3.60	4.60	1.05
25-99	3.55	4.55	1.00
100 and up	3.45	4.45	.95

Dependability - Quality - Service

Garon Bee Company, Donaldsonville, La.

ITALIAN BEES AND QUEENS——

Give this a thought: Your hives are no better than your queens. A young vigorous queen will pay her cost many times over in bees. We can supply quantity lots of queens in April and May. Discounts to large queen users. See us for quick service. Write for particulars.

	Queens	2-lb. pkg.	3-lb. pkg.
1-25	$1.20	$3.75	$4.75
25-up	1.10	3.50	4.50

BAYOU BEE COMPANY **Raymond Viguerie, owner**

BOURG, LOUISIANA

D. B. Eells

Open Dates

on

3—BANDED ITALIAN QUEENS & PACKAGES

10% deposit books order on remaining open dates in May and June. LIVE DELIVERY GUARANTEED. FULL weight packages, with thrifty, young laying queens. Shipped in new containers. Balance due on order before shipping date. Small orders (RUSH) filled on 100% deposit by wire on open dates only.

PRICES APRIL 1st-MAY 31st	1-24	25-99	100-up
Queens	$1.10	$1.05	$1.00
2-lb. and queen	3.90	3.80	3.70
3-lb. and queen	4.90	4.80	4.70

Write for prices on 4 lb. and 5 lb. packages. Queenless packages, deduct price of queen.

QUALITY—RAPID, HONEST SERVICE

EELLS HONEY & BEE COMPANY, Houma, La., U. S. A.

(In the Sunny South)

Tanquary's Quality and Service

We are doing everything possible to handle all the business we possibly can and still not sacrifice QUALITY and SERVICE.

We have a few shipping dates left, ORDER NOW, that you might get this SERVICE.

May We help You?

Write, wire, or call your orders in.

PRICE LIST

Quantity	1 to 24	25 to 49	50 to 99	100 up
2-lb. pkg. with queen	$4.15	$4.05	$4.00	$3.70
3-lb. pkg. with queen	5.15	5.05	5.00	4.70
4-lb pkg. with queen	6.15	6.05	6.00	5.70
Tested Queens	2.10	2.05	2.00	1.75
Untested Queens (Mated)	1.35	1.30	1.25	1.15

Queenless packages, deduct $1.10 per package.

Package bees f. o. b.----Queens Postpaid.

Tanquary Honey Farms, Inc., Lena, S. C.

Three Band Italian

PACKAGE BEES

Full weight, prompt shipment, young bees. State Health Certificate with each shipment. Live arrival guaranteed. Replacement or refund made promptly upon receipt of bad order from your express agent.

Our prices until June 10, 1946 in U. S. Funds:

	Each	With Queens			
	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1-29	$1.10	$4.00	$5.10	$6.20	$7.30
30 or more		3.50	4.50	5.50	6.50

For Queenless Packages deduct $1.10 each from above prices. If queens are wanted introduced, add $1.10 to the price of each package.

JACKSON APIARIES

Funston, Ga., U. S. A.

Look for this Sign
When You Want
QUALITY AT LOW COST!

Trade Mk. Reg.
U. S. Pat. Off.
KELLEY—"The Bee Man"

Queens

We offer three- banded Italian queens for shipment from Paducah starting April first.

1 to 24	$1.10 Each Postpaid.
25 and up	1.00 Each Postpaid.

THE WALTER T. KELLEY CO.

Paducah, Kentucky

CARNIOLANS
PACKAGE BEES WITH CARNIOLAN QUEENS!
2-lb. bees with queen. $4.00; 3-lb. bees with queen, $5.00.
Over 24 packages, deduct 25c each package.
We offer 2000 packages, MAY DELIVERY.
EPHARDT HONEY FARMS, Plaucheville, Louisiana

Better Bred Queens — Three-Banded Italians

Booked to capacity until May 10th. Book your order now for shipment after that date.

2-lb. packages with queens	$3.50
3-lb. packages with queens	4.50
Queens	1.00

Write for prices in large quantities.

Calvert Apiaries, Calvert, Alabama

BEES ..... BESSONET'S ..... QUEENS

April is tentatively booked up, but should a surplus develop, we will offer this surplus to buyers ordering during the month. Only small orders will be accepted. Refer to previous ads for prices.

BESSONET BEE COMPANY
DONALDSONVILLE, LOUISANA

Italian Package Bees and Queens

Write for your May Prices
We are booked until May 10.
Live delivery guaranteed. No C.O.D.

Oscar Arnouville
HAMBURG, Box 35, LA.

Send for free catalog—hundreds more!

—GOT A HOBBY?--

Keep up with the latest developments in your field. Here's a group of magazines that specialize in a particular subject! Send your subscription today!

Gleanings in Bee Culture, $1. per year
Beekeepers' Item, $1.
American Bee Journal, $1.

DAIRYING
American Dairy Goat News, m., $1
Dairy Farmers' Digest, $1.
Dairyland News, s. m., 50c.

FARMING
The Country Book, quarterly, $1.
Farmers' Digest, m., $2.

FRUIT
Better Fruit, m., $1.
Eastern Fruit Grower. $1.

LIVESTOCK
Berkshire (Hog) News, m., $1.
Chester White (hog) News, m., $1
Southeastern Cattleman, $1.
Pacific Stockman $1.
The Sheepman, $1.
Arizona Stockman, m., $1.50
Plantation Stockman, m., $2
Coastal Cattleman, m., $1.

HORSES
The Horse, bi-monthly, breeding, schooling, training, horse sports, $5
Thoroughbred (Horse) Record, w., $4.
Rider and Driver, m., horse-sport-pleasure, $3.50
Spokesman & Harness World, m., $1.

PIGEONS
American Pigeon Journal, Squab-fancy, $1.50
Pigeon News, fancy only, $1.50

RABBITS
Small Stock (rabbits, cavies), $1.
American Rabbit Journal, m., $1.
Inter. Comm. Rabbit Journal, (Angora) $1.
American Angora Rabbit Magazine, $1.00 a year.

OTHER SPECIALTIES
The Soybean Digest, $1.50
New Agriculture (sugar beets only) $2
Small Com. Animals & Fowls, 50c
Co-operative (Farmers) Digest, $2
Modern Game Breeding, m., pheasants, $3.
Black Fox Mag., m., fox, mink, $2
Frontiers (natural history) 5 issues, $1
Canary Journal, m., $2.
Tailwagger, m., (Dogs) $2.50.
Eagle Mail Order News, m., $1.
Good Health, m., $1.
Canary World, m., $1.25.

All magazines are monthlies unless otherwise noted; prices are for one full year. Satisfaction guaranteed. All orders are handled promptly and acknowledged. Rush your subscription today. Remit in any way convenient to you.

MAGAZINE MART

Dept. G B **Plant City, Florida**
Sample copies at single copy prices.

THREE BANDED ITALIANS

We find ourselves in the fortunate position of being able to supply more bees than we had expected. Can accept a few more orders for shipment before April 20th; also after May 6th. Over 95% of our early booking is by old customers. Health certificate with each shipment.

	1-24	25-99	100 up
2-lb. pkg. with queen	$4.00	$3.75	$3.50
3-lb. pkg. with queen	5.00	4.75	4.50
Extra queens	1.25	1.15	1.05

For queenless packages deduct price of queen. Add $1.00 per pound for larger packages.

W. E. PLANT

Hattiesburg, Rt. No. 2, Miss.

GASPARD'S QUALITY ITALIAN QUEENS AND PACKAGE BEES!

We are booked up for the months of April and May, but we are taking orders for June delivery 20% books your order; balance at shipping time. Prices as follows:

PRICES AS FOLLOWS:

2-lb. package with queens, $3.50
3-lb. package with queens, 4.50
4-lb. package with queens, 5.50
5-lb. package with queens, 6.50
Comb packages with one frame of brood and honey, add $1.50 per package.

J. H. GASPARD
HESSMER, LOUISIANA

Booked up for 1946

on Comb Packages.

* * * *

Thanks for all orders.

* * * *

Wm. Piefer & Sons

GAUSE, Box 83, TEXAS

Quality Bees and Queens

2 lb. Pkg. with queen, 1 to 24, $4.00
25 to 99, 3.75
100-up, 3.50
3 lb. Pkg. with queen, 1 to 24, 5.10
25 to 99, 4.80
100-up, 4.50

May we book you?

ANDERSON BEE COMPANY
Opp, Alabama

Lotz Quality Sections

featuring

Top quality material--Glossy polish--Smooth dovetails--Oval V-grooves--Accurate Dimensions--Fine workmanship--Reasonable prices.

With the ever-increasing demand for comb honey why not produce more, and increase your profits? Remember there is no ceiling price on comb honey.

Prices in our 1944 pricelist still in effect.

AUGUST LOTZ COMPANY

Manufacturers and jobbers of Bee Supplies

Boyd - Wisconsin

QUEENS * * QUEENS

Three Banded Italian queens, best of quality. Satisfaction guaranteed; a health certificate with every order.

1 to 25, $1.25 each; 25 to 50, $1.15; 50 and up, $1.05.

Alamance Bee Company

Geo. E. Curtis, Manager., Graham, North Carolina.

Package Bees and Queens

Packages with Queens

2-lb.	$3.50 each
3-lb.	4.50 each
Queens	90c each

Strain Italians

Satisfaction guaranteed

* * * * *

O. K. Anderson & Son

Coffee Springs, Alabama

THE ONLY WORTHWHILE QUEEN EXCLUDER on the market

Chrysler's All Steel Electric Welded Queen Excluder allows maximum bee passage, better ventilation, more honey production. No wood, no sharp edges to injure bees, no burr combs. New rust proofing process. So durably made and accurately spaced that it is permanently Queen excluding and will last a lifetime. Why not try a few. Send for Circular E-2.

W. A. CHRYSLER & SON

Chatham - Ontario - Canada

Use the **Handy Hive Hoist** to work your bees

Takes the back work out of bee work

Pat. applied for

Write for descriptive folder.

Tuttle Mfg. Co. Baraboo, Wisc.

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE

Keep up on markets, practices, scientific data, reguations, plant possibilities.

1 year—$1.50; 3 fears—$3.00. U. S. and Canada. Foreign postage 25c a year additional.

AMERICAN BEE JOURNAL

Hamilton, Illinois

Soy Flour & Pollen Traps

We are distributors of Staley's Lo-Fat, High Protein expeller processed soy flour for beekeepers. We offer the finest quality in our soy flour and pollen traps.

KILLION & SONS APIARIES

Paris, Illinois

Red Stick Apiaries & Co.
PACKAGE BEES — QUEENS

Twenty-five years as Commercial Queen Breeders.
Oldest Combless Package Bee Shippers in Louisiana.

OPEN FOR 1946 BOOKING
ITALIAN STOCK - RESISTANT STOCK
YOUR CHOICE

Quantity	Queens	2-Lb.	3-Lb.
1 to 24	$1.25	$4.00	$5.00
25 to 99	1.15	3.75	4.80
100 or over	1.05	3.50	4.50

Contract Your Orders Early!
Net with order for United States or Canada

RED STICK APIARIES & CO.
Main Office, 125 Lessard St.
Donaldsonville, Louisiana
Telegraph, Western Union

Italian Bees and Queens

We are prepared to book your orders for package bees and queens for April, and May, shipments. We have and always give what we advertise.

	Queens	2 lb. pkgs.	3 lb. pkg.
1-24	$1.25	$4.00	$5.00
25-99	1.15	3.75	4.75
100-up	1.00	3.50	4.50

Quality package bees and queens, and shipments made on time is what we offer to you. Live delivery guaranteed.

Lucedale Apiaries
Lucedale, Mississippi

PACKAGES and QUEENS

For May and June

High quality disease-free Italians. Safe arrival and satisfaction guaranteed. We solicit your inquiries.

PORT GIBSON APIARIES
Port Gibson, Miss.

ITALIAN BEES AND QUEENS

We are booked up on package bees until May 10th

Prices:

2 lb. package with queen	$3.45
3 lb package with queen	4.45
4 lb. package with queen	5.45
Queens, each	1.10

HOMAN BROS., Shannon, Miss.

NORMAN'S

Package Bees and Queens

Now Ready

Stop - Read - Compare

Yes, we are back again offering you the Highest Quality 3-band Italians obtainable. Queens purely mated. Full weight packages, prompt service, safe arrival, and Satisfaction Guaranteed. Health certificate furnished.

Don't delay, Order today.

Unt. Queens,	1 to 24	$1.20 each.
	24 or more	1.10 each.
Tested Queens,	1 to 24	2.40 each.
	24 or more	2.20 each.
2 lb. pkg. with	queen, 1 to 10	4.00 each.
	10 or more	3.85 each.
3 lb. pkg with	queen, 1 to 10	5.00 each.
	10 or more	4.85 each.

JOHN A. NORMAN

Ramer, Ala.. - - - - - - Route 2.

NOW BOOKING
1946 PACKAGES

2-lb. package with queen	$3.75
3-lb. package with queen	4.75
Queenless package	deduct $1.00

"Dixie's Best" (Italians)
TANNER BEE CO.
Laurel, Miss.

The John M. Davis Strain

Bred the Davis Way

Italian Queens!

Guaranteed purely mated and to satisfy you in every way or your money refunded.

You be the judge!

	1-24	25-up
Young Laying Queens	$1.25	$1.15
Young Tested Queens	1.50	1.40

After June 30th Untested $1.00 each, any number.

LITTLE'S APIARIES
P. O. Box 122, Shelbyville, Tenn.

LEATHER COLORED ITALIAN QUEENS
MIDDLE TENNESSEE APIARIES

1 to 25, $1.25; 26 on up, $1.10—From Imported Strains.
¼ books orders. Balance before shipping. Add 5 cents for all queens by air.
(All Queens after June 15, $1.00)

J. B. TATE & SON
1029 No. 4th St., Nashville 7, Tenn. **Tel. No. 34509M**

5,000 Packages — Italian Bees With Queens. 5,000 Extra Queens Offered During April and May.

3-lb. Packages with Queens $5.00

2-lb. Packages with Queens 4.00

By Express

Extra Queens 1.25

WE SERVE TO SERVE AGAIN!

SUNNY SOUTH APIARIES

MARKSVILLE, LA. I. CLARK, PROP.

Package Bees and Queens Three-Band Italians

Shipment after May 10th.

Packages by Express collect. Queens by mail postpaid. Safe delivery guaranteed or replaced without cost. All packages with queens.

Prices; May shipment:

	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1 to 24	$1.25	$4.00	$5.10	$6.25	$7.45
25-up		3.75	4.85	5.95	7.20
Prices after June 1st:					
1 to 24	1.00	3.80	4.90	6.00	7.15
25-up	.95	3.60	4.65	5.70	6.85

No Disease. State Inspected.

Order as early as possible and send cash in full with order. Canadian orders payable in U. S. Funds. We are booked to capacity through April and early May.

Crenshaw County Apiaries

Rutledge, Alabama, U. S. A.

GOLDEN WEST!

Try our western-bred queens and bees, for they are the best. The war is over now and the Clifton Brothers are back together again to give more efficient service and better bees and queens than ever before.

We are booking orders for spring 1946.

CLIFTON APIARIES

OROVILLE, Box 684, CALIF.

Three Banded Queens - Italian

Leather colored Strain

Any Quantity, $1.00 each; Over-weight 3-lb. package and queen, $5.00 each

Gooch Apiaries

Farmersville, Texas.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"AUSTRALASIAN BEEKEEPER"
any time. Inquire for International Mon-
Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to the Editor, P. O. Box 20, West Maitland New South Wales
Australia

BOOKED UP

Until June 1st On Package Bees And Queens

After that date we will have plenty of good Queens and may be able to handle a few late package orders. Weather conditions here have been very unfavorable this winter but what happens from now on will determine the bee season. We hope it will be extra good for you.

• • • •

After May 20th

Lots of:	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1 - 24	$1.10	$3.25	$4.95	$6.05	$7.15
25 - 99	1.00	3.60	4.65	5.70	6.75
100 - up	.90	3.35	4.35	5.35	.6.35

• • • •

For Queenless Package Deduct Price of Queen
Payable in U. S. Funds

THE STOVER APIARIES

Maybew, Miss.

YOU MUST BE SATISFIED

Quality and Production-bred Italian Queens

We are completely sold for April, but can still fill May orders.

10% will book your order.

Write us now!

1-24	$1.10
25-up	1.00

HEART O'TEXAS APIARIES

P. O. Box 1203
WACO, TEXAS

JENSEN'S

"Magnolia State" Strain
Italian Package Bees and Queens

We're off to the grandest start with queen-rearing of any season in our history. Ideal spring weather, cell-building colonies boiling over with bees; cells look like it might be May with a clover honey flow. Good queens tell the story of your success with package bees.

Everything we ship is our own production and stock. You won't get stung buying Jensen's bees. Can accept a few more orders for late May delivery

Prices:

	Queens	2 lbs. w/q	3 lb. w/q
1-24	$1.25	$4.00	$5.10
25-99	1.15	3.75	4.80
100 up	1.05	3.50	4.50

Jensen's Apiaries

MACON, MISS.

BEES AND QUEENS!

ALL BREEDERS NORTHERN RECORD PRODUCERS!

Our system of holding queens in large nuclei until egg ability is proven assures you of the finest queens to be had at any price.

2-lb. pkg. with queen, $4.00
3-lb. pkg. with queen, 5.00
4-lb. pkg. with queen, 6.10
Extra queens 1.25

100% discount on orders of 25 or more queens or packages with queens. For queenless packages deduct price of queen.

THE RICH HONEY FARMS
JEANERETTE, LA.

WHITTLE'S

PACKAGE BEES AND QUEENS
LEATHER COLORED ITALIANS
are Guaranteed to Please!

Booking Orders now For 1946
We have a number of open shipping dates. Do not delay, book now and be safe!

1946 PRICES

	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1-24	$1.25	$4.00	$5.10	$6.20	$7.30
25-99	1.15	3.75	4.80	5.85	6.90
100-up	1.05	3.50	4.50	5.50	6.50

GEO. E. WHITTLE
Star Route, West
GREENVILLE, ALA.

DIXIELAND'S

Leather Colored Italians, Package Bees and Queens for May and June Delivery

Unable to supply until May 20th

	Queens	2-lb. pkg	3-lb. pkg.	4-lb. pkg.
1-24	$1.25	$4.00	$5.10	$6.20
25-99	1.15	3.75	4.80	5.85
100-up	1.05	3.50	4.50	5.50

Prices after June 1st

	Queens	2-lb. pkg	3-lb. pkg.	4-lb. pkg.
1-24	$1.10	$3.85	$4.95	$6.05
25-99	1.00	3.60	4.65	5.70
100 up	.90	3.35	4.35	5.35

Dixieland Apiaries
Greenville, Alabama

PACKAGE BEES AND QUEENS

Leather Colored Italians
Bred for Production

Prices of Package Bees with Queens

Lots of	2-lb.	3-lb. Ex. Queen	
1 to 24	$4.00	$5.00	$1.25
25 to 99	3.85	4.80	1.10
100 or more	3.75	4.70	1.10

Terms, 25% deposit to book order, balance ten days before shipping date. We replace any bees that die in transit if it is our fault, if it is the carriers' fault, file claim with them. We are now shipping. Old customers will be given preference.

THE ISLAND APIARY
Collier City, Fla.

FEEDING BEES FOR COMB PRODUCTION

(Continued from page 202)

the wooden frame could be produced at a cost of 19 cents each.

During the test period, July 14 to September 22, 1943 a total of 488 combs were drawn from foundation by feeding 772.5 pounds of low-grade honey, or 1.58 pounds of honey for each comb produced.

The average amount of wax added to each sheet of foundation was 0.188 pound, and for the four colonie the cumulative ratio of wax produced to honey consumed was 1. to 8.40. The quality of combs produced was superior to those drawn by colonies during a normal flow.

It was also found that the efficiency of colonies in producing wax increased as the test continued, although no reason is apparent for this change.

In areas where it is difficult to produce combs of good quality during slow honey flows, such as those in many sections of the South, this method of producing combs by feeding low-grade honey continuously merits consideration.

Detecting Evidence of Starvation by Examination of Entrances

(Continued from page 203)

is necessary. The bees may be in such a weak condition that entrance feeders would be neglected. Entrances should be reduced to prevent robbing from other colonies.

Colonies found starving on June 15 stored between 50 and 75 pounds of honey by July 1. Therefore. it pays to feed such colonies, as the few pounds of sugar used to save them is paid back with interest added.

Holliston. Mass.

[We have occasionally found a strong colony almost dead, with some bees on the top of the cluster quivering. Every experienced beekeeper knows what that means. One good method to revive such a colony is to sprinkle some warm sugar syrup on top of the frames. It is well to tip the front of the hive up a bit to prevent the syrup from running out the hive entrance.—Ed.]

Extra large Three-banded Italian queens, scientifically reared from selected stock. Don't wait, place your order now for any number.

1 to 10, 90c each
11 to 50, 85c each
$80.00 per hundred

Fresh from our yards.

CENTRAL LOUISIANA APIARIES
Marksville, Louisiana

PACKAGE BEES AND QUEENS
Bright 3-Banded Italian
We offer you
Choice Queens
Superior Quality - Quick Service
Young Baby Bees - Full Weight
Prices to May 20th

	1-24	25-100
2-lb. pkg. with queen	$4.00	$3.75
3 lb. pkg. with queen	5.00	4.75
Untested queens,	1.25	1.10
Tested queens	2.50	2.20
Prices after May 20th		
2-lb. pkg. with queen	$3.75	$3.50
3-lb. pkg. with queen	4.75	4.50
Tested queens	2.00	1.80
Untested queens	1.00	0.90

Package Bees F.O.B. express. If by Parcel Post add postage. Safe arrival guaranteed. Health certificate furnished in U.S.A. and Canada.

NORMAN BROS. APIARIES
Ramer, Alabama

DEPENDABLE 3-BANDED QUEEN BEES

Place your order NOW for Summer and Fall Delivery

June 1st, through October.

1 to 11, $1.00 each
12 to 99, .90 each
100 or more, .80 each

TERMS; Cash with order

Live delivery and Satisfaction Guaranteed,

Health Certificate with each shipment;

John C. Hogg, Tifton, Ga.

HELP FOR YOU . . .

is available in daughter queens of "DR" stock which has been improved yearly by scientific selection. It will aid you in your fight against American foulbrood. The performance of this stock is why beekeepers are placing repeat orders. Satisfaction is what you get with the use of this stock. No other stock can offer the quality of parentage, of rearing methods and of testing service.

SO WHY NOT GET THOSE QUEENS WHICH GIVE YOU THE GREATEST VALUE?

Write for shipping dates. No change in prices for this season.

Iowa Beekeepers' Association
State House, Des Moines 19, Iowa

We Have Bought

The Beekeepers Item

We have bought the BEEKEEPERS ITEM and hope to make this into the best bee magazine published. To do this we will need many articles and pictures of nice looking bee yards, honey houses, etc.

We can use only clear, sharp pictures that will print well. We want pictures only of neat, well painted apiaries, honey houses, etc., that will encourage other beekeepers to improve their equipment. We will need a description or a story to go along with these pictures to fill in the details, as a picture without an explanation is of little value.

If you have a new and improved machine or system of doing any bee job, especially if it is time and labor saving we would like pictures and full details.

If you have an invention of merit we would like drawings or pictures and a description of it. There will be no charge for these insertions as there will be an inventor's page which should interest everybody.

Possibly you have some ideas on how a bee magazine should be run or information or departments that you would like to see developed in a magazine of this kind. If so, write us in detail.

We want new and original material and can not use material that has been or is being used in other magazines, excepting government releases. We need a large volume of material as we wish to increase the size of our magazine and we will pay for all material printed on the following basis:

Articles	$5.00 per page.
Pictures	1.00 each.

Our first edition should be in the mails about April 15th so if you have some pictures and articles on hand send them in at once and we may get them in the first edition. At least, write us for your free sample copy and send along any material that you may have to offer for publication.

The Beekeepers Item

Walter T. Kelley, Editor

Paducah, Kentucky

This photo shows a portion of one of our queen yards containing over 6,000 nuclei

ITALIAN PACKAGE BEES - QUEENS

2-lb. with queen	$4.00
3-lb. with queen	5.00
Extra queens, each	1.25

QUEENS
Light Italians

WE SOLICIT QUEEN TRADE FROM LARGE QUEEN USERS ALL OVER THE NATION!

We were never out of queens in 1945, in spite of the unusually heavy demands. Place your order where you can rely on getting your queens when you want them. Write for our special prices on large orders.

OVERBEY APIARIES, BUNKIE, LA.
Phone 657 day or night

TALKS TO BEEKEEPERS

(Continued from page 231)

The next comb should be removed and examined, then placed back in the hive at the nearest side. The remaining combs should be examined in like manner. Before placing the last comb removed back in the hive, the frames in the hive should be pushed over, all at once, to the further side to make room for the first frame removed. This prevents killing bees.

When it is necessary to examine the bottom brood chamber of a double story hive, the upper chamber after being examined should be placed crisscross on the outer cover inverted while the combs in the lower chamber are examined, so that no bees may be killed.

Conditions Within the Hive. In the latitude of Northern Ohio, normal colonies during the middle of April should have brood in from four to six combs. If the season is early, more brood will be found. Farther south, colonies have reached full strength and in some states some surplus honey has been stored.

The combs near the sides of the brood chamber should contain a considerable amount of sealed honey. Combs in the center of the brood chamber should contain eggs and brood in all stages, sealed and unsealed, as well as honey in the upper portions of the combs.

Cells adjacent to the brood will contain pollen of many colors. Balls of pollen may be seen on the legs of the worker bees. This pollen is placed in the cells of the combs by the bees, to be used later as larval food. Fresh nectar may be seen glistening in the cells of the combs.

Three Kinds of Cells. A comb should consist mainly of worker cells which are approximately one fifth of an inch in diameter. Drone cells are about one fourth of an inch in diameter and are found usually in the lower portion of the combs and are easily detected because they project somewhat beyond the depth of the worker cells and look like bullets projecting from cartridges. Queen cells appear before a swarm issues and are usually built along the lower edge of the comb. They are easily recognized because, instead of being horizontal, as are worker and drone cells, they are

(Continued on page 252)

Package Bees and Queens

Due largely to the loyalty of Mr. Pettit's good customers, our packages are completely booked for this year. We thank you.

MAY QUEENS

We will have available a limited supply of good Italian queens for May delivery.

Prices Postpaid

1-23, $1.25 each; 24-98, $1.20 each; 99 and up, $1.15 each

GIRARDEAU APIARIES

J. H. Girardeau, Jr., Mgr., Tifton, Ga.

Pure Italian Bees and Queens

"Queens" "Packages"

Thanks to satisfied customers, I am booked to capacity on packages til May 10th.

Live delivery guaranteed. No C.O.D. orders. Order direct from this ad. 20% books your order.

Baby Bees Overweight Packages

	Queens	2 lbs.	3 lbs.
1-24	$1.25	$4.00	$5.10
25-99	1.15	3.75	4.80
100 up	1.05	3.50	4.50

C. W. Baker

Western Union Post Office

Epes, Ala. Sumterville, Ala.

"We have never had any disease."

HONEY FANCIES

(Continued from page 206)

Soften gelatine in cold water. Add hot water, honey, and salt; stir until dissolved. Add vinegar and lemon juice. Cool. When it begins to thicken, add remaining ingredients. Pour into mold that has been rinsed in cold water. Chill. Serve on greens with mayonnaise.

Honey Peanut Butter Chiffon Pie

One tablespoon unflavored gelatine, 1 cup cold water, 2 egg yolks, well beaten, ¼ cup honey, ½ teaspoon salt, ½ cup peanut butter, 2 egg whites, ½ teaspoon vanilla, and one baked pie shell.

Soften gelatine in ¼ cup water. Combine egg yolks, ½ of the honey, ¼ cup water, and salt in top of double boiler; blend. Add gelatine. Place over boiling water, beat constantly with rotary beater until thick and fluffy. Cool. Place peanut butter in bowl, add remaining water gradually, beat until smooth. Add egg mixture and vanilla; blend with beater. Chill until slightly thickened. Beat egg whites until stiff, then beat in remaining ¼ cup of honey gradually. Fold into peanut butter mixture. Turn into baked pie shell or crumb crust. Chill until firm. If desired, just before serving, top with chopped nuts, or honey sweetened whipped cream.

Aurora, Nebr.

Package Bees, Old Line Bred Since 1924

Queens, $1.10; 2-lb. Package, $3.80; 3-lb. Package, $4.80; Including Queen; Extra Pound Bees, $1.15

Place your order early to get your shipping date when wanted. War II veterans first served. Spring queens raised from stock of over 200 pound production after pulling bees for packages all spring till in July, 1945. Also daughters of queens bred for resistance to disease.

Homer W. Richard : Rt. 3, Box 252-A, El Dorado, Ark.

NO CHANGE IN PRICES FOR 1946

WE ARE BOOKED TO CAPACITY FOR ALL APRIL SHIPPING DATES. Can accept orders for May shipping only. First come—first served!

All orders for more than two packages SHOULD BE FOR MULTIPLES OF THREE, to make even crates. FOUR LB. PACKAGES and SPECIAL LOOSE-QUEEN PACKAGES cannot be shipped earlier than MAY 15th. All orders should be accompanied by payment of $1.00 PER PACKAGE, to confirm and hold shipping date, balance payable before shipping.

PRICES—Quantity Scale:	(1 or 2)	(3 to 24)	(27 to 99)	102 & above
2-lb. package with queen	ea. $3.90	ea. $3.65	ea. $3.50	ea. $3.35
3-lb. package with queen	ea. 4.90	ea. 4.65	ea. 4.50	ea. 4.35

Extra Queens, Untested, $1.00, any quantity—Tested, $2.00, any quantity.

For queenless packages deduct $1.00 - For Special Loose-Queen packages, add $1.00

THE PUETT COMPANY, Hahira Georgia

LIVE AND LEARN

(Continued from page 207)

feed can made of a tight fitting sealed can full of syrup, but with a few small holes punched in it over the hole in the upside down inner cover. The hive cover then went on, I retired to a log, removed the armor, smoked a cigarette, and rested for an hour. I was exhausted.

It's a lot easier now. I do the same things, but I guess that my average time in actually putting the package in the hive, after feeding them through the screen with a flit gun that has never been used for anything else, does not run into more than five minutes to the package. Probably it would be less than that if I ever had a lot of packages to handle.

And, oh yes — I have dispensed with all the armor plate excepting the veil. I always wear it no matter how gentle the bees may be. One sting in the eye is all that you need, so discretion is the better part of valor.

Three Band Italian Bees With Queens for 1946!

Plenty Queens March 1st through season, $1.25 each.

	1-24	24-48	48-up
2-lb. package	$4.00	$3.75	$3.60
3-lb. package	5.00	4.75	4.60

20% deposit books order balance ten days before shipping.

E. R. RALEY

Box 1610, Daytona Beach, Fla.

ITALIAN QUEENS

Place Your Order Now
Prices after May 10th:
1 to 50.....$1.25 each.
50 and over.....$1.00 each.
Terms:
10% with Order,
Balance before Shipment

John S. Shackelford
Live Oak. California.

PACKAGE BEES!

are necessary in your program for 1946. Sugar is going to be scarce for sometime yet and honey will still demand top prices.

To produce the maximum crop replace winter loss and fill all available equipment with PACKAGE BEES!

Boost wintered over colonies with queenless bees.

Supplies and labor are either on hand or available to assure you prompt service on orders placed early!

2-lb. with queen $3.50
3-lb. with queen 4.50

SATISFACTION GUARANTEED

Rossman & Long

P. O. Box 133, Moultrie, Ga.

Norman's Bright 3 - Banded Italian Bees

oOo

We have been breeding the bright 3-banded bees for 26 years and they have been giving satisfaction to our customers all over the country. If you need some bees, why not try a few of our package bees and queens. We guarantee safe arrival, health certificate, and satisfaction.

All Package Bees F.O.B. Express

2-lb. pkg. with young queen, $4.00; 6 or more, 3.75.
3-lb. pkg. with young queen, 5.00; 6 or more, 4.75.
4-lb. pkg. with young queen, 6.25; 6 or more, 6.00.
Untested queens $1.15 each.
Teseted queens 2.00 each.

oOo

Norman Bee Co., Ramer, Ala.

Three Band Italian Package Bees and Queens

Full weight, prompt shipment, young bees, State Health Certificate with each shipment. Live arrival guaranteed. Replacement or refund made promptly upon receipt of bad order from your express agent.

	2 lb.	3 lb.	4 lb.
1 to 25	$3.75	$4.75	$5.75
25 or more	3.50	4.50	5.50

All with queens

Morehead & Sons Apiaries

Funston, Georgia

QUEENS

Vigorous — Productive

THREE BANDED ITALIANS

1-49, $1.25; 50 up $1.10

J. Willard Reed

1750 Santa Fe, Corpus Christi, Tex.

TALKS TO BEEKEEPERS

(Continued from page 249)

nearly vertical and resemble peanut shells in shape.

A word about Hiving Packages of Bees. There are various methods of shipping and hiving packages. We wish there might be a standardization of bee shipping cages—also methods of installing packages.

It is necessary to feed bees sugar syrup before putting them into hives. This makes the bees quiet and easy to handle. A few years ago we ran onto a convenient method of feeding packages after they are received from the express company and before they are put into the hives. The picture on page 231 shows the packages of bees piled flat-wise, over a tub, on top of two sticks laid across the top of the tub. The sugar syrup should be made of equal parts of granulated sugar and water. The warm syrup should be poured on the top screen of the top package in order to run through all of the packages. No syrup is wasted. More than one application of syrup is needed for bees to become well filled with syrup before they are put into the hives.

When the weather is cool it is necessary to feed the bees warm syrup. After taking all of the syrup they can hold, the bees should be dumped into the hive from the package after some frames are removed temporarily from the hive. The bees will not fly around much because they are filled with syrup. The queen, which is also wet with the syrup, should be released from her cage among the bees. She cannot fly away because her wings are wet. She will start laying sooner than a queen that has to be released from a cage by the bees.

" SUNKIST ITALIAN QUEENS "

Replace those old queens with young, vigorous queens. We have open dates in April and May for queens. We have only late May or after package bees to offer. We offer THREE BANDED ITALIANS, LIVE DELIVERY, HEALTH CERTIFICATE, SATISFACTION. Prompt reply. 10 per cent books your order—balance 10 days before shipping.

Prices before June 1st.

	Queens	2-lb.	3-lb.
1 - 25	$1.10	$3.50	$4.50
25 --up	1.00	3.40	4.40

Queen prices after June 1st.
1-25, 90c 25-up, 80c

SUNKIST BEE COMPANY

HOUMA, LOUISIANA — Route 2, Box 9, Tele. 1299-J

80 YEARS AMONG THE BEES

(Continued from page 221)

half sections that held the frames by supports in the center of each end bar. In each half section were rabbets that fit over the supports. A set of frames would be put in the bottom sections and then the top section was set over and held to the bottom sections by Van Deusen hive clamps. To complete the whole hive, Mr. Shuck had a lifting jack that made it possible to reverse the whole hive by its middle with a minimum of effort.

Why Did Reversible Frames or Hives Pass Out Like Contraction?

Never in all apicultural history were there two more promising ideas than contraction and the scheme of reversing. The first so reduced the bee force there were continuous failures of the seasons. Its votaries came to the conclusion that intensive agriculture had absorbed aii the bee pasturage. Bah!

The second, "reversing," also died a natural death because the benefits expected did not offset the cost of labor and equipment. Turning the brood combs upside down did not always force the honey upstairs into the supers. Young brood, unsealed, if at the top when reversed in a colder stratum of air near the bottom, often chilled. This was shown by the young larvae carried out at the entrance. To tamper with or disturb a brood nest is generally a mistake.

Did reversing kill swarming cells? With a few exceptions it failed and the cells left would cause swarming just the same. See article by E. Kretchmer of Iowa in Gleanings, page 651, 1886.

In short, all the propaganda benefits of reversing were shown to be greatly exaggerated, so much so that there is not a reversible hive or frame on the market todoy. By the same token there is not a Heddon hive, which its inventor said would revolutionize beekeeping, on the market. Both had scintilla theoretical merits that did not materialize in dollars and cents. In short, the cost of either far outweighed the theoretical gain.

Lesson: Let's not now over-evaluate some new ideas of great promise today which may fall by the wayside. Again I repeat: "What's the use of knowing so much when so much you know ain't so."

BEEKEEPERS' BEST FRIEND

We must build for the future. The present demand for honey may slacken somewhat if and when sugar again becomes available in quantity.

The American Honey Institute

has been creating consumer interest in honey since 1928. Let's back the Institute with our dollars. . . . .

The American Honey Institute

Commercial State Bank Building

Madison, Wisconsin

Pollen Substitutes

	1 lb.	5 lb.	10 lb.	25 lb.
Brewer's yeast and soy flour expeller mixed 1 to 6		$0.75	$1.50	$3.00
Brewer's yeast	0.40	1.50	2.75	5.50
Soy flour			1.40	2.50
Dry skim milk	$0.40	1.50	2.75	5.75

Write for prices in larger quantities. Include postage if you wish it by parcel post. All prices collect, Bainbridge, N. Y.

M. Y. S. Company, Bainbridge, New York.

York's Package Bees and Queens for 1946

Quality Bred Italians

No Change in Price for Coming Season

PACKAGE BEES WITH YOUNG LAYING QUEENS

Quantity	1 to 2	3 to 27	30 to 96	99 up
2-lb- pkgs.	$4.25 each	$4.10 each	$3.95 each	$3.75 each
3-lb. pkgs.	5.25 each	5.10 each	4.95 each	4.75 each
Extra Queens	1.30 each	1.25 each	1.25 each	1.25 each

Queenless Packages, deduct $1.10 per package.

Booking orders now for 1946, same terms and price. We thank our customers for their patronage and will be prepared to serve you better with highest quality the coming season. A large number of buyers have already placed orders for the coming season and if you have not done so, we urge you to do so without delay for better choice of shipping dates. There is every indication of an extra heavy demand. Order direct from this ad and save time.

YORK BEE COMPANY, Jesup, Ga., U. S. A.

The Universal Apiaries

ITALIANS! **QUEENS!** **CAUCASIANS!**

Daughters of Queens bred for Resistance — Bred to Italian Drones
All three races bred in separate yards.

2-lb. package bees with queen, $4.00; 3-lb. package bees with queen, $5.00
Extra Queens, $1.25 each

OVER 25 YEARS A SHIPPER IN U. S. A. AND CANADA

Sulfathiazole used in feed at no extra cost to you.

MASTER MIX POLLEN made from Soybean flour, Cottonseed meal, Brewers yeast, Skim milk, Natural pollen, Invert sugar and Sulfathiazole, 10-lb. pail, $2.50 six pails, $13.50. Send for FREE CIRCULARS.

BLUE BONNET APIARIES, Rt. 2, Box 23, WESLACO, TEXAS

• • • • •

Three Frame Nuclei with Untested Laying Italian Queen, $4.75

Three Frame Nuclei with one year old Tested Italian Queen, Tested for Prolificness and Honey Production, $5.50

Texas State Health Certificate with Shipment. Live arrival guaranteed. Replacement or Money Refunded Promptly upon receipt of Bad Order from your Express Agent.

The Gillespie Apiaries — Llano Texas

• • • • •

ABC and XYZ
of Bee Culture
1945 Edition

We have a few slightly damaged copies of this edition that we are offering for $2.00 postpaid.

This is a wonderful offer.

Limited Stock

Only $2.00

The A. I. Root Co.
Medina, Ohio.

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S
Economy Foundation

Not excelled for quality strength and workmanship

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons
Rt. 4 Bay City, Mich.

"A CALL FOR HELP"
Will you help us keep our customers happy?
We are appealing to our old and new friends alike:
"Bring in or ship us your Honey"
We need it—B-Z-B jars need it—and the busy housewife needs it.
You help us help them keep up their energy.

B-Z-B Honey Company
361 E. Valley Blvd., ALHAMBRA (Los Angeles County), CALIF.

The Hubbard APIARIES

WRITE FOR
FREE CATALOG

Quality Bee Supplies. Factory Prices
Prompt Shipment from Stock
Satisfaction Guaranteed

THE HUBBARD APIARIES
Manufacturers of Bee Supplies
ONSTED, MICHIGAN

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The A. I. Root Company, Publishers, Medina, Ohio